SANYO
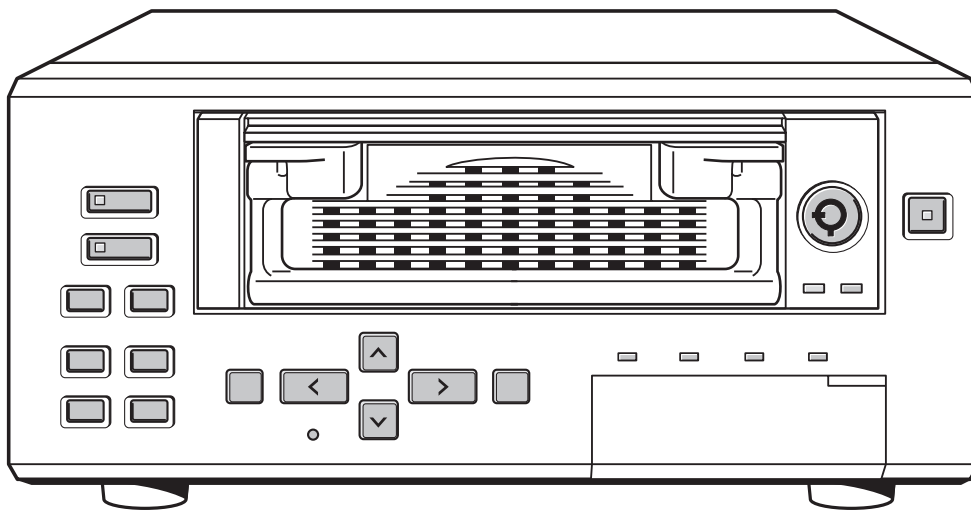
INSTRUCTION MANUAL

DSR-300

Digital Video Recorder

About this manual

Before installing and using this unit,
please read this manual carefully.
Be sure to keep it handy for later reference.

PRECAUTION

CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK).
NO USER-SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

WARNING: To reduce the risk of fire or electric shock, do not expose this appliance to rain or moisture.

CAUTION: Changes or modifications not expressly approved by the manufacturer may void the user's authority to operate this equipment.

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules.
These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generated, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.
If this equipment does cause harmful interference radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
● Reorient or relocate the receiving antenna.
● Increase the separation between the equipment and receiver.
● Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
● Consult the dealer or an experienced radio/TV technician for help.

For the customers in Canada

This class B digital apparatus complies with Canadian ICES-003.

CAUTION

Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type recommended by the manufacturer.
Discard used batteries according to the manufacture's instructions.

Declaration of Conformity

Model Number　　　: DSR-300
Trade Name　　　　: SANYO
Responsible party　: SANYO FISHER COMPANY
Address　　　　　　: 21605 Plummer Street,
　　　　　　　　　　　 Chatsworth, California 91311
Telephone No.　　　: (818) 998-7322
● This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
　(1) this device may not cause harmful interference,and
　(2) this device must accept any interference received, including interference that may cause undesired operation.

Location

For safe operation and satisfactory performance of your unit, keep the following in mind when selecting a place for its installation:
● Shield it from direct sunlight and keep it away from sources of intense heat.
● Avoid dusty or humid places.
● Avoid places with insufficient ventilation for proper heat dissipation. Do not block the ventilation holes at the top and bottom of the unit. Do not place the unit on a carpet because this will block the ventilation holes.
● Install the unit in a horizontal position only.
● Avoid locations subject to strong vibrations.
● Avoid moving the unit between cold and hot locations.
● Do not place the unit directly on top of a monitor TV, as this may cause playback or recording problems.

Avoiding Electrical Shock and Fire

● Do not handle the power cord with wet hands.
● Do not pull on the power cord when disconnecting it from an AC wall outlet. Grasp it by the plug.
● If any liquid is spilled on the unit, unplug the power cord immediately and have the unit inspected at a factory-authorised service center.
● Do not place anything directly on top of this unit.

SERVICE

This unit is a precision instruments and if treated with care, will provide years of satisfactory performance.
However, in the event of a problem, the owner is advised not to attempt to make repairs or open the cabinet.
Servicing should always be referred to your dealer or Sanyo Authorized Service Centre.

INTRODUCTION

Main features

■ **This digital video recorder can be used to store images recorded by monitoring cameras onto a removable HDD.**

■ **Supports removable HDDs**

This feature allows you to remove and store HDDs containing important recordings.

■ **Complete range of recording/playback functions**

● You can play back and record images at the same time.
● Using timer recording, it is possible to make recordings at different times each day.
● You can record and play back audio.
● Pre-alarm recording allows you to record images from up to 15 minutes ahead of an alarm.
● Using the integrated motion-detector function, you can trigger alarm recording in response to the detection of motion.
● Both field recording and frame recording are supported for image acquisition.

■ **Search function - lets you instantly display the desired image. (→P. 29)**

● Searching in order of alarm occurrence
● Searching by thumbnail using alarm search
● Searching of the archive area
● Searching by date/time
● Searching for intruder motion using motion detection search

■ **The security lock function lets you restrict users for data and equipment management. (→P. 72)**

■ **Expandable, can be connected to a PC**

● Support for CompactFlash cards allows recorded images to be copied.
● Images can be recorded to the hard disk and played back from the multiplexer.
● When the separately sold VZU-COM300 interface board is installed, network control is enabled and it will be possible to monitor the unit's images, to perform playback and search, and to make menu settings from a remote location.
In addition, PC control can be performed using an RS-232C cable, and a system controller (sold separately) can be connected via RS-485.
● Remote control is possible with the wired remote control unit (sold separately). (→P. 16)

Accessories

Check that you have all the parts below.
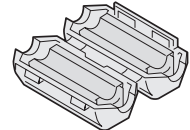
Power cord
AC adapter
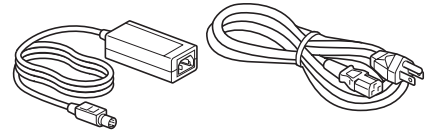
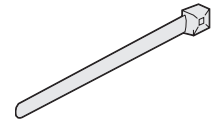* Do not use the AC adapter with other equipment.

Ferrite core (2)
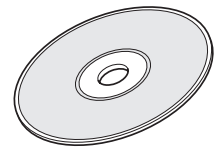1 pc.: **For the DVR power cord (accessory)**
1 pc.: **For the LAN connection cable (packaged together with the option RS-485/ 232C/LAN interface board)**

Power cord tie

Instructions
CD-ROM

Removable HDD tray
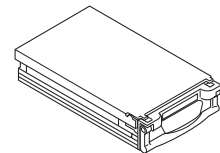
Tray release keys (2)
HDD fastening screws (4)
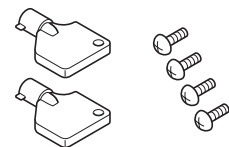
Symbols used in this manual

| NOTE | ► | Information describing operation methods or how to get the most out of functions. |

⚠ CAUTION Information describing the correct use of the digital video recorder.

(→P. xx) indicates the page to be referred to.

Copyright

- This manual and software are copyrighted by Sanyo Electric Co., Ltd.
- Brand and product names used in this manual are the trademarks or registered trademarks of their respective companies.
- Except for personal use, copyright law prohibits the use of recorded copyrighted images without the permission of the copyright holder.

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NETWORK OPERATION

SPECIFICATIONS

1 BEFORE USE

Notes on handling removable HDDs

This unit uses removable hard disk drives (HDD).
Be sure to observe the following points carefully when operating, setting-up and servicing the unit.

■ Do not subject the unit to shocks or vibration.

If the unit is subjected to shocks or vibration, it may damage the HDD or cause corruption of the data stored in the HDD.

- Do not move the unit while the power is turned on. Always be sure to turn off the power before removing the unit from or placing it onto the rack.
- When transporting the unit, pack it securely using the specified packing materials. In addition, use a method of transportation that minimizes vibration.
- When placing the unit down on a surface such as a floor, attach the specified feet to the base of the unit and place it down gently.

■ Do not move the unit for 30 seconds after turning off the power.

After the power is turned off, the disk inside the HDD will continue to spin for a brief period due to inertia, and the heads will be in an unstable state.
During this time, the unit is even more susceptible to shocks and vibration than when power is being supplied. Make sure that the unit is not subjected to even gentle vibration for at least 30 seconds after turning off the power.

■ Do not operate the unit when condensation has formed.

If the unit is operated when condensation has formed, it may cause operating problems.
If sudden changes in the ambient temperature occur, wait for the temperature to stablize before operating the unit.

■ Notes when replacing the HDD

Be sure to follow the correct replacement procedure when replacing the HDD.

- HDDs that have been removed from their packing may not operate correctly if they are subjected to any shocks and vibration. It is recommended that you place HDD onto a soft, level surface with the printed circuit board facing upward after unpacking it.
- Be careful not to subject the HDD to shocks or vibration when removing and tightening screws as part of the HDD replacement procedure. Make sure that all screws are tightened securely so that they will not become loose.
  The HDD is sensitive to static electricity, so you should take proper precautions to prevent static electricity buildup.

■ Handling the HDD unit by itself

If transporting or storing the HDD unit by itself, always be sure to pack it in the specified packing first.
In addition, use a method of transportation that minimizes the vibration.

If the HDD becomes damaged, handle the unit and the damaged HDD that has been removed in order for it to be replaced carefully to prevent the problem from being aggravated until as the nature of the problem can be checked and analyzed.

Conditions to avoid

- The hard disk is sensitive to dust, vibrations and shocks, and should also not be used near magnetic objects. To prevent loss of recorded data, observe the following precautions:
- Do not subject the digital video recorder to shocks.
- Do not use the digital video recorder on a vibrating or unstable surface.
- Do not disconnect the power plug from the wall outlet during recording or playback.
- Do not use the digital video recorder in areas of extreme temperature changes (10ºC or more per hour).
- Condensation may occur if the digital video recorder is moved to an area of extremely different temperature or high humidity. If the digital video recorder is used with condensation inside it, operating problems may occur.
- Do not install the digital video recorder in areas of constant vibration such as motor vehicles or trains.

The hard disk and cooling fan are expendable items

Under use in an ambient temperature of 25ºC, the hard disk should generally be replaced after 2 years, and the cooling fan after 3 years. These figures are intended as guidelines only, and are not guarantees of part performance.
The CHANGE DISK indicator flashes if a problem occurs in the hard disk or fan. (→P. 18)

Installation conditions

The digital video recorder has ventilation holes on its left, rear and bottom panels. Make sure these holes are not blocked after installation.
Do not use the unit in an area of poor ventilation such as a bookshelf or box.
When installing the unit in a rack, ensure a gap of at least 5 cm at the top and bottom.

For important recordings

- Always make a test recording beforehand to check that the digital video recorder's playback is normal.
- Note that no compensation will be provided for losses due to recording or playback problems arising from problems with the digital video recorder or its connected devices during operation.
- To be prepared for malfunctions or accidents, back up important recordings periodically.

Hard disk protection

The hard disk is checked automatically at power ON. If a hard disk problem is found, the CHANGE DISK indicator flashes. To initialize the disk or save images stored on the disk, contact a Sanyo service centre.

Care

- To clean the digital video recorder, unplug the power plug from the wall outlet and wipe the unit lightly with a soft cloth.
- To remove heavy grime, wipe the digital video recorder with a well-wrung cloth soaked in a solution of water and neutral detergent, and then wipe it with a dry cloth.
- Do not clean the unit with benzene or paint thinner. Doing so may break down the finish or strip the paint.
- When using a chemical cloth, be sure to follow the precautions provided with it.
- Do not spray insecticide or other volatile chemicals on the cabinet. Do not allow rubber or vinyl products to come into contact with the digital video recorder for extended periods.
  Doing so may break down the finish or strip the paint.

During extended disuse

Extended disuse may cause problems in functions, so turn the power on and operate the unit occasionally during such periods.

Backup battery

The digital video recorder comes with a built-in lithium battery. When the digital video recorder has been connected to a wall outlet for at least 48 hours and the date and time have been set, the clock function will continue to operate for up to 30 days after the power plug is disconnected.
When disposing of the digital video recorder, contact a Sanyo service centre for information on how to dispose of the lithium battery.

MENU button

The [MENU] button is disabled when the unit is connected to a PC. When the [MENU] button is operative, operations from the PC are disabled.

AC adapter

Do not use the AC adapter with other equipment.

2 REPLACING A REMOVABLE HDD

A separately-sold hard disk tray (VA-DT300) can be installed to facilitate easier storage and replacement.

> ⚠ **CAUTION**
>
> ● **When replacing with a HDD used in a DSR-300;**
>   Of the menu settings, only the recording area settings and the overwrite on/off setting are used for the HDD.
> ● **When replacing with a HDD used in a DVR other than a DSR-300;**
>   It is treated as a new HDD. The recorded contents will be initialized.
> ● **About the HDD;**
>   Install an HDD provided by Sanyo. If an HDD supplied by a company other than Sanyo is used, Sanyo cannot be responsible for failures in performance or operation.

Replacement

> ⚠ **CAUTION**
>
> ● Always set the HDD as the master.
>   The recorder will not operate if slave or cable select is set.
> ● In cases where the HDD is not set as the master, or for whatever reason, it is not recognized by the unit, remove the power plug from the wall outlet, wait for approximately 30 seconds, and then remove the HDD.

1 Connect the removable HDD's connector and place the HDD inside the tray.

Remove the brown antistatic sheet inside the tray.

> ▎**NOTE** ▶
>
> ● Assemble the two sockets in such a way that the red wires are positioned within them.

Red wires
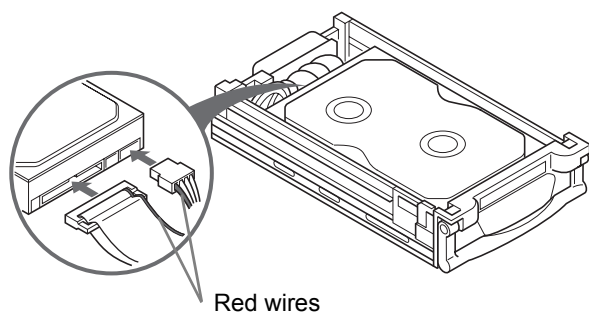
2 Assemble and tighten the 4 screws.
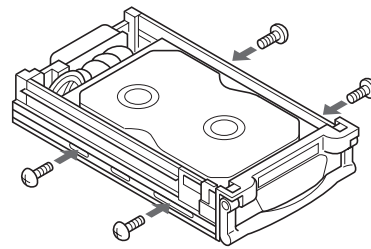
* Screw tightening torque: 0.5 to 0.6 N•m
  Use a non-slip torque screwdriver.

> ▎**NOTE** ▶
>
> ● When tightening the screws, ensure that both screws on the same side are tightened first. Tightening diagonally may result in the HDD being strained.
> ● Only the supplied screws should be used. (Inch-system screws are used for assembly; accordingly, the use of other screws may result in the HDD or screw threads being damaged.)

3 Replace the cover.

Slide the cover over the case until the clasp locks into place.

Clasp
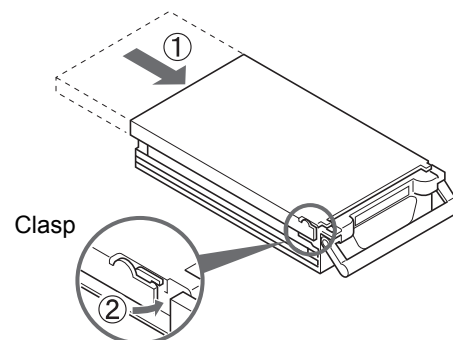
4 Place the removable HDD tray inside the unit.

Push in the HDD tray as far as it will go.
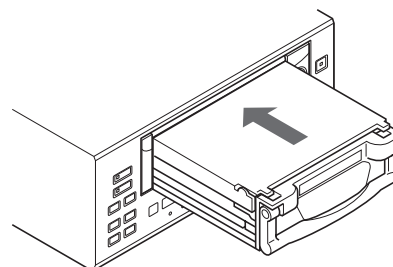
5 Insert the tray release key, turn it in the direction of the arrow, and then press the [CHANGE DISK] button.

The HDD indicator will light up and the CHANGE DISK indicator will switch from green to red.

CHANGE DISK indicator
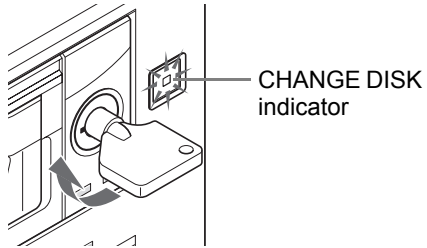
⚠ CAUTION

● Whenever the unit is to be transported, ensure that the HDD tray is removed from the unit and packaged separately.
● Correct operation cannot be guaranteed with HDDs not recorded to using a DSR-300. If you want to use a HDD that has been recorded on by a different DVR, be sure to initialize it before use.
● Even if the tray to which the HDD has been attached is connected directly to a PC, the playback of images will not be possible.
● If you cannot turn the tray release key when installing the HDD tray, the HDD tray may have shifted. Reposition the HDD tray properly.

Removal

1 With the power turned on, press and hold the [CHANGE DISK] button for at least 2 seconds.

The CHANGE DISK indicator changes from red to flashing green, then lights steadily after 10 seconds. A buzzer sounds intermittently in time with the indicator's flashing. The HDD indicator turns off.

[CHANGE DISK] button
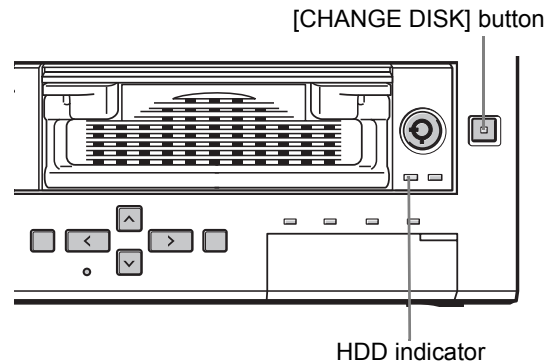
HDD indicator

2 When the CHANGE DISK indicator lights in green and the HDD indicator turns off, insert the tray release key and turn it in the direction of the arrow.

This action will cause the HDD tray lock to be released.

CHANGE DISK indicator
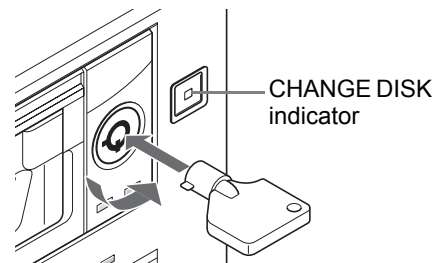
⚠ CAUTION

● An alarm will be sounded if the tray release key is turned when the CHANGE DISK indicator is lit in red or before the HDD indicator has turned off. Do not remove the HDD tray while such an alarm is sounding. Failure to observe this precaution can result in data being damaged.
● Do not forcibly pull out the HDD tray when the tray release key is ON as this will result in the tray being damaged.
● If you cannot turn the tray release key when installing the HDD tray, the HDD tray may have shifted. Reposition the HDD tray properly.
● Because data might be damaged, a warning tone will sound if the tray release key is turned without pressing the [CHANGE DISK] button while the power is on.
● If the HDD is removed without using the [CHANGE DISK] button, there is a danger that recorded data may be lost.
● The [CHANGE DISK] button is disabled during recording or timer recording stanby.

3 Pull the HDD tray out using the handle.

Pulling the handle causes the HDD tray lock to be released.
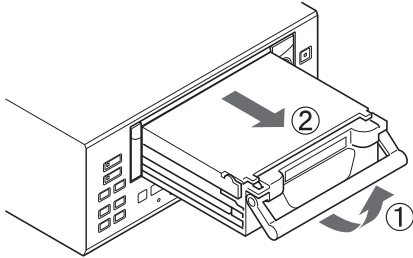
4 Pull the clasp, release the lock, and remove the cover.
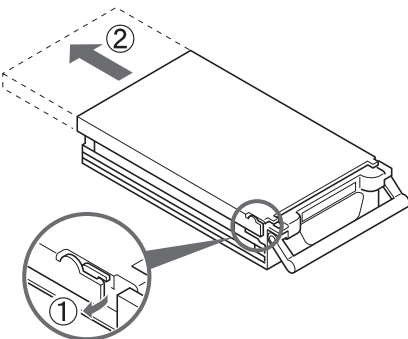
5 Remove the 4 screws, take the removable HDD out of the tray, and release the connector.
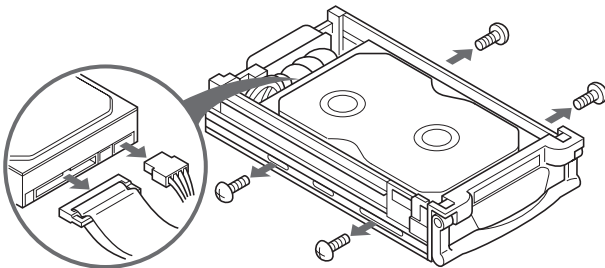
NOTE

● Whenever the unit is to be transported, ensure that the HDD tray is removed from the unit and packaged separately.

Front panel
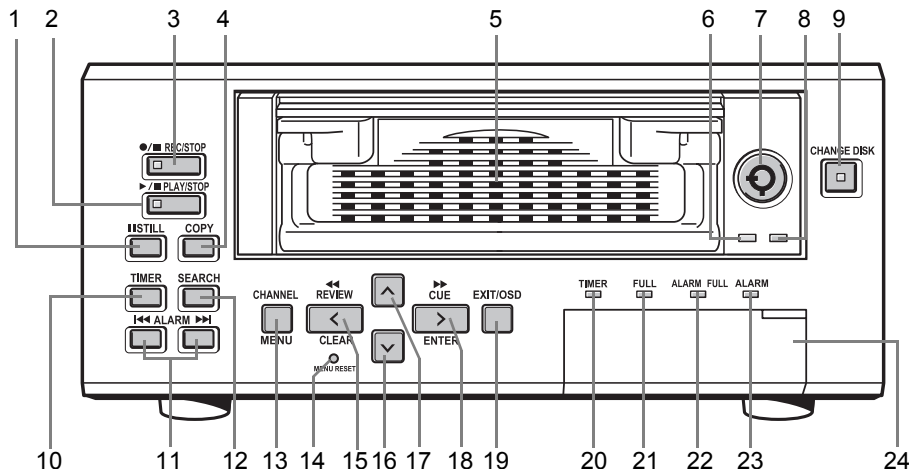
1. [STILL] button
Pauses the screen image when pressed during playback. Pressing the button again restarts playback.

2. [PLAY/STOP] button and indicator
Plays back the normal image (indicator lights). When pressed during playback, stops playback.

3. [REC/STOP] button and indicator
Starts normal recording. Indicator lights during recording. During recording, pressing the button for at least 2 seconds stops recording and turns off the indicator.

4. [COPY] button (→P. 36)
Copies images to the hard disk's archive area, to a CompactFlash card, or to a Microdrive.

5. Removable HDD tray

6. HDD indicator
Lights up to indicate that data transfer between the unit and HDD is enabled.

7. Tray release key
Turns power supply to the HDD ON and OFF. When the key is turned clockwise, the HDD indicator will light up indicating the ON condition. When OFF, the tray can be removed. See caution for the key operation. (→P. 11)

8. HDD access indicator
Lights up to indicate the reading or writing of data.

9. [CHANGE DISK] button and indicator (→P. 18)
The red indicator lights when the power is turned ON. When this button is held down for 2 seconds, the green indicator flashes then lights, and the HDD can be removed. If an HDD or fan error occurs, the red indicator flashes.

10. [TIMER] button (→P. 23)
When pressed while recording is stopped, the unit enters timer record standby. When the set time arrives, the digital video recorder starts timer recording.

11. [ALARM] button (→P. 30)
When the [|◄◄] or [►►|] button is pressed during playback, the unit skips to the next earlier or later alarm.

12. [SEARCH] button (→P. 29)
● When the button is pressed while recording or stopped, the search setting screen is displayed.
● When the button is pressed during the playback of frame-recorded images, the playback mode is toggled between Frame and Field.

13. [MENU] button
Used to display the menu screens.

[CHANNEL] button (→P. 28)
When a multiplexer capable of decoding channel information (i.e., camera numbers) is connected to the unit, a channel can be specified for single-channel playback using this button.

14. [MENU RESET] button (→P. 43)
Used to initialize the currently displayed sub-menu settings.
In addition, this button can also be pressed while the normal screen is displayed to make time adjustments.

15. [REVIEW/CLEAR] button (→P. 26)
When pressed during playback, lets you fast-rewind the image while watching it on-screen. When pressed while the image is still, reverse playback is performed. Also used for menu screen operations.

16. [∨] button
Used to move the cursor in menu screens down. Also used to change setting values.
Used for frame advance (reverse) and adjusting the CUE/REVIEW speed. Also used to set the security lock.

17. [∧] button
Used to move the cursor in menu screens up. Also used to change setting values.
Used for frame advance (forward) and adjusting the CUE/REVIEW speed.

18. [CUE/ENTER] button
When pressed during playback, lets you fast-forward the image while watching it on-screen. When pressed while the image is still, forward playback is performed. Also used for menu screen operations.

19. [EXIT/OSD] button (→P. 20)
● Returns the display to the normal screen when the main menu, a sub-menu, or a setting screen is displayed.
● If pressed repeatedly during recording or playback, the operation display can be moved or hidden.

20. TIMER indicator (→P. 23)
The indicator lights when the unit enters timer record standby.

21. FULL indicator (→P. 23)
The indicator begins to flash when the remaining available memory in the hard disk's normal recording area reaches the setting value.
When the recording area becomes full, this indicator turns on and recording will be stopped.

22. ALARM FULL indicator (→P. 57)
The indicator begins to flash when the remaining available memory in the hard disk's alarm recording area reaches the setting value.
When the recording area becomes full, this indicator turns on and recording will be stopped.

23. ALARM indicator
Flashes when recording an alarm image. Indicator lights during pre-alarm recording.

24. CompactFlash card slot (→P. 38)
Used to insert a CompactFlash card or Microdrive.

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English

Rear panel
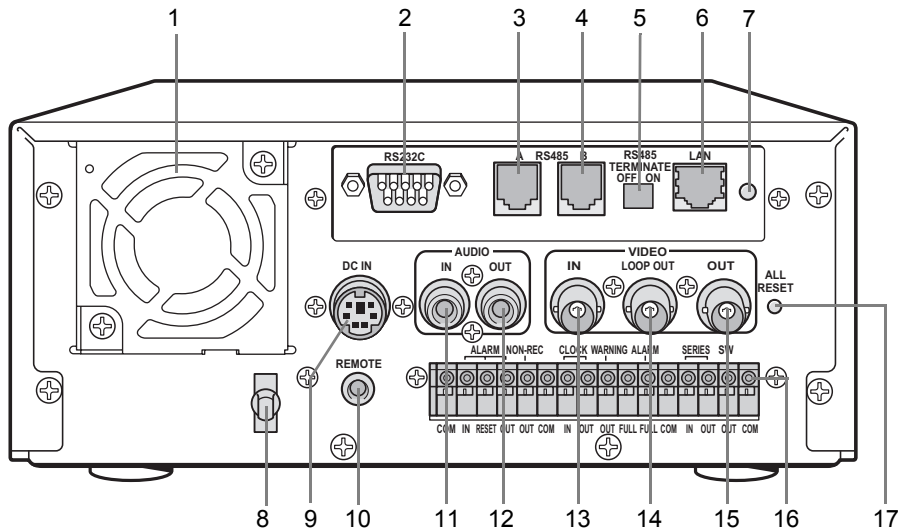
1. **Fan**

2. **RS-232C terminal (when option board is installed)**

3. **RS-485 terminal A (when option board is installed)**

4. **RS-485 terminal B (when option board is installed)**

NOTE ▶

● Do not connect the RS-485 A and RS-485 B connectors to a phone line.

5. **RS-485 termination switch (when option board is installed)**

6. **LAN terminal (when option board is installed)**

7. **LAN link indicator (when option board is installed)**

8. **Power cord holder**
Secure the power cord to the holder using the cord tie (accessory) as shown in the illustration.
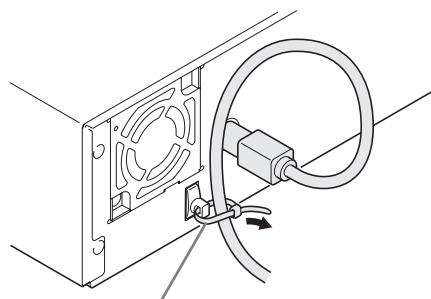
Power cord tie

9. **AC power socket (AC IN)**

10. **Wired remote control terminal**

11. **AUDIO IN terminal**

12. **AUDIO OUT terminal**

13. **VIDEO IN terminal**

14. **VIDEO LOOP OUT terminal**

15. **VIDEO OUT terminal**

16. **Control and alarm terminals**
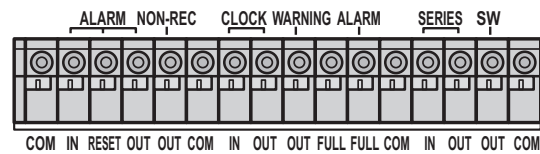
Pin	Signal
COM	Ground
ALARM IN	Alarm input
ALARM RESET IN	Alarm reset input
ALARM OUT	Alarm output
NON REC OUT	Non rec out terminal
COM	Ground
CLOCK IN	Clock adjust input
CLOCK OUT	Clock adjust output
WARNING OUT	Warning out terminal
DISK FULL OUT	HDD space warning output
ALARM FULL OUT	Alarm-recording area space warning output
COM	Ground
SERIES IN	Input terminal used when recording with multiple digital video recorders connected.
SERIES OUT	Output terminal used when recording with multiple digital video recorders connected.
SWITCH OUT	Switch output
COM	Ground

17. **ALL RESET switch**
Resets the recorder's microcomputer. Menu settings are not reset.
Resets the clock and backup mode setting.

4 INSTALLATION AND CONNECTIONS

This section describes how to connect the digital video recorder to the CCTV camera and other devices. Be sure to read the instruction manuals for each connected device. Improper connections can cause smoke or malfunctions.

Basic connections

The connections for the camera, TV monitor, system controller, multiplexer, microphone, and PC are shown below.

Multiplexer (sold separately)
* When controlling the multiplexer from a system controller

System controller (sold separately)

CCTV camera
(sold separately)

Switching HUB

Microphone
(sold separately)

PC

Amp (sold separately)

PC

Video
input terminal

To audio input
terminal

* Wrap the ferrite core once around the LAN connection cable before attaching the cable. (Packaged together with the option RS-485/232C/LAN interface board.)
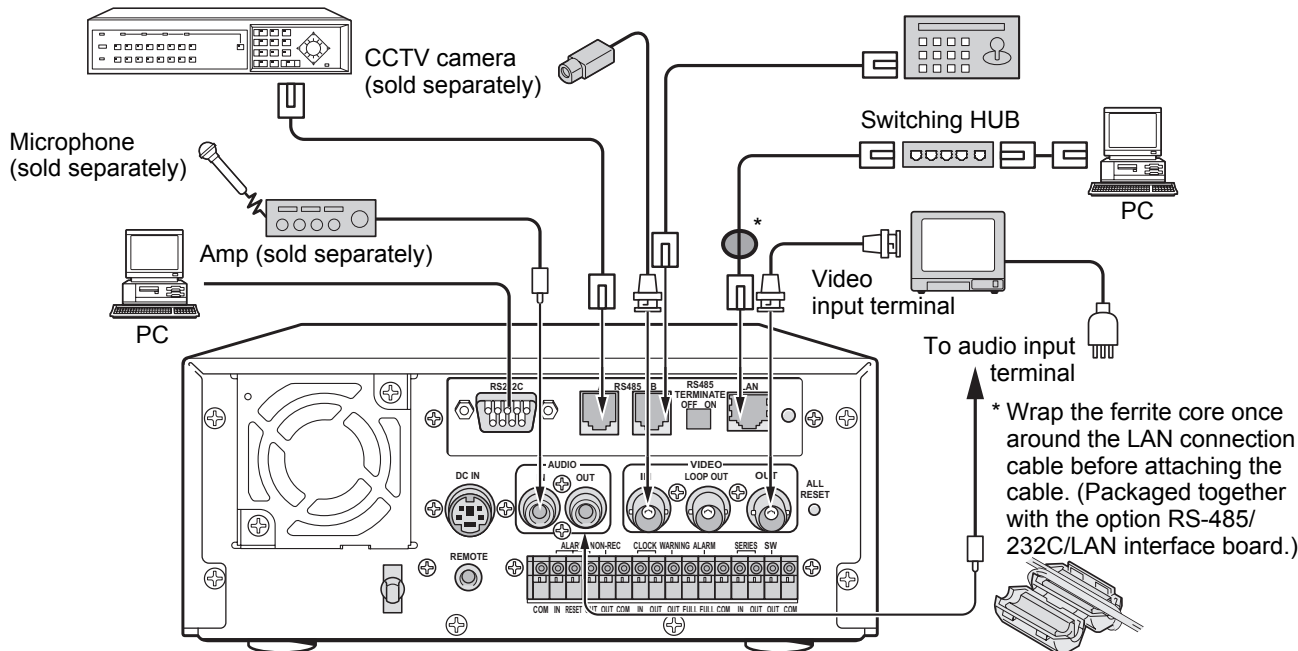
Connecting a remote control circuit

The connections for a remote control circuit are shown below. Making the connections shown below lets you operate the digital video recorder by remote control.

● Connect the cable of the wired remote control (VA-RMN01, sold separately) to the wired remote control terminal.
The DSR-300 will function as follows in response to VA-RMN01 key operations.
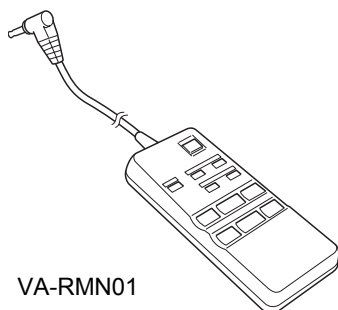
VA-RMN01

VA-RMN01 key	DVR operation
REC	REC
MENU	MENU
↓ SHIFT/SHIFT →	TIMER/SEARCH
↓ REC/PLAY SPEED ↑	↓ / ↑

VA-RMN01 key	DVR operation
REW/REVIEW	REW/REVIEW
PLAY	PLAY
FF/CUE	FF/CUE
REVERSE	EXIT/OSD
STOP	STOP
PAUSE/STILL	PAUSE/STILL

Connecting cables to the control and alarm terminals

(1) Insert the cable while pushing in the lock pin using a flat-blade screwdriver.
(2) Remove the screwdriver to secure the cable in place.

Cable

Flat-blade screwdriver

Connecting a multiplexer

Monitor (sold separately)

Analog input

Analog output

Multiplexer (sold separately)

Ground (C)

Alarm output terminal

Switch input terminal

Alarm input terminal

Switch output terminal

Making analog series connections

Monitor (sold separately)

Monitor (sold separately)

CCTV camera (sold separately)

To 3rd and sub-sequent DVRs

To Series out

To Common

To Series in

Amp (sold separately)

To Series in

To Common

To Series out

To Common

To Series in

To Series out

Amp (sold separately)

Connecting the power cord

1 When you have finished making all the other connections, insert the power plug into the wall outlet.

There is no power switch. The display indicators flash, and after a few moments, the monitor screen displays the camera image.
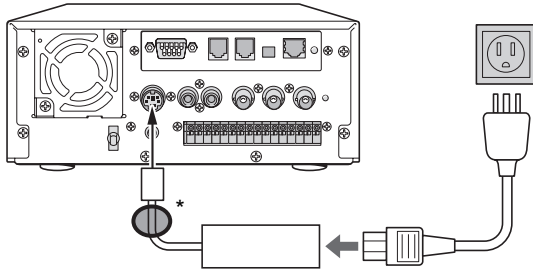
* Attach the supplied ferrite core to the base of the power cable (coiling not necessary).

● **When turning the power ON for the first time**
"PLEASE SET THE CLOCK" is displayed on the monitor screen. Follow the procedures on P. 22 to set the clock.

● **If the clock is already set**
The operation display area is displayed.

Operation display area

01- 01- 04
00: 00: 00 EN 10FPS
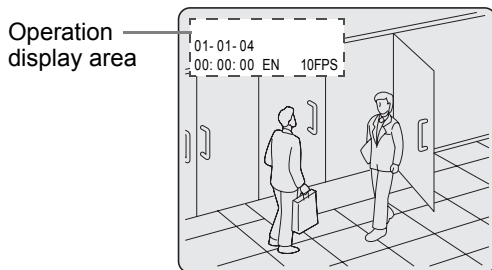
⚠ CAUTION

● **If the CHANGE DISK indicator is flashing in red**
The digital video recorder has a self-check function that indicates problems. If there is a problem at power ON or during operation, the type of problem is indicated by how rapidly the CHANGE DISK indicator flashes. Contact a Sanyo Authorized Service Centre if the CHANGE DISK indicator flashes.
4 flashes per second:
The hard disk is checked automatically at power ON. If a hard disk problem is found, the CHANGE DISK indicator flashes, and the hard disk must be replaced or reformatted. If you need to save images stored on the disk, contact a Sanyo Authorized Service Centre.
1 flash per second:
Fan problem

● **If you disconnect the power cable**
Do not move the recorder or subject it to vibration for at least 30 seconds after turning OFF the power.
The disk in the hard disk drive briefly keeps spinning after power OFF due to inertia, during which time the head is unstable. At this time, the disk is sensitive to shocks or vibrations, so avoid even light shocks.

INTRODUCTION

18

PREPARING FOR USE

Operation display area

Whenever the power is turned ON, the operation display area will be displayed at the top left of the monitor screen. This area indicates the date and time, the image quality, the recording rate, and other information needed for operation.
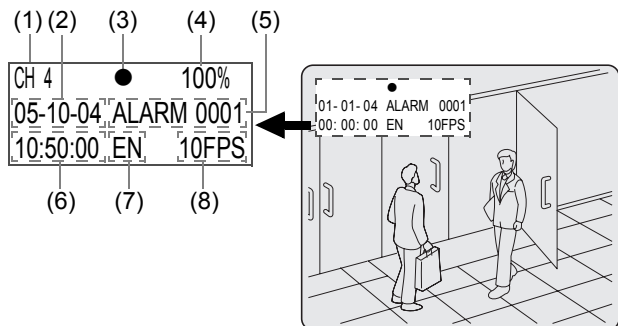
(1) Camera number display (→P. 28)

Displayed when a camera number has been specified for playback.

(Only in cases where a multiplexer capable of decoding channel information is connected to the unit.) (→P. 52)

(2) Date display (→P. 22)

Shows the month/day/year.

01-01-04 (month-day-year)

(3) Operating symbol display

Displays the current operation (such as recording or playback).

● : Recording   ►► : Fast-forward playback
► : Playback   ◄◄ : Fast-rewind playback
◄ : Reverse playback   ►►| : Slow playback
‖ : Still   ◄‖ : Reverse slow playback

NOTE ►

● During simultaneous recording and playback, the display indicates playback (►).

(4) Remaining memory in recording area (→P. 57)

Displays the remaining memory as a percentage when overwriting in the normal recording area or the alarm recording area is forbidden. To change the remaining-memory display format, follow the instructions in "4. RECORDING CONDITIONS SET" from the menu.

(5) Alarm display and alarm count display (→P. 24)

When you set an alarm using the "ALARM REC MODE SET" menu item, the alarm display area displays the following information.

● **When alarm recording is set;**
  "ALARM" is displayed.
  "ALARM" is flashed during alarm recording.

● **When pre-alarm recording is set;**
  "PRE" is displayed.
  When an alarm occurs, "PRE" disappears, "ALARM" is displayed, and the number of alarms is shown. The total number is indicated in the alarm display.

● **When performing playback from the archive area;**
  "ARCHIV" is displayed.

(6) Time display (→P. 22)

"00:00:00" is displayed when you turn the power ON for the first time. The digital video recorder uses the date and time to manage recording and playback points.

(7) Image quality display (→P. 59)

Displays the quality of the image that can be recorded on the hard disk. Set to "EN" (Enhanced) in the default settings.

Setting	Description
SF	Super Fine
FI	Fine
EN	Enhanced
NO	Normal
BA	Basic

(8) Recording rate display (→P. 46)

Displays the recording rate that can be recorded on the hard disk. The default setting is 10.00 FPS (for field recording).

NOTE ►

● Although operations such as playback, copying, and data transfer are possible while recording, this unit gives priority to recording and other operations may be delayed as a result. Communication may be cut off in some cases.

Changing the position of the operation display area
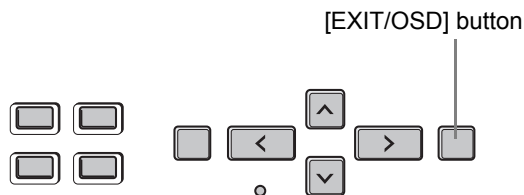
[EXIT/OSD] button

1 Press the [EXIT/OSD] button repeatedly.

Pressing the [EXIT/OSD] button repeatedly lets you move or erase the operation display area.

Example: Normal screen

Operation display area
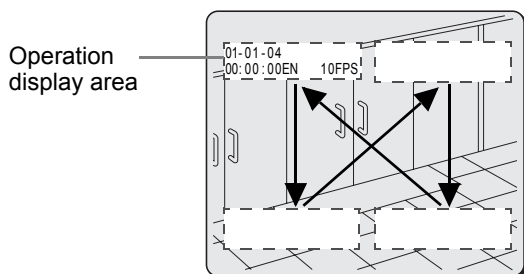
Built-in hard disk

Hard disk recording area

- When an unused hard disk is installed, the initial recording area settings (normal recording area 80%, alarm recording area 19%, archive area 1%) are automatically set at recorder power ON.
- When a hard disk with set recording areas is installed, the set recording areas are used for recording.
  You can check the recording areas of a set hard disk by selecting "3. RECORDING AREA SET" from the menu.
- When installing a hard disk that was used by another DVR, check the recording area settings.

[B] Alarm recording area

[C] Archive area

[A] Normal recording area

Hard disk's recording area
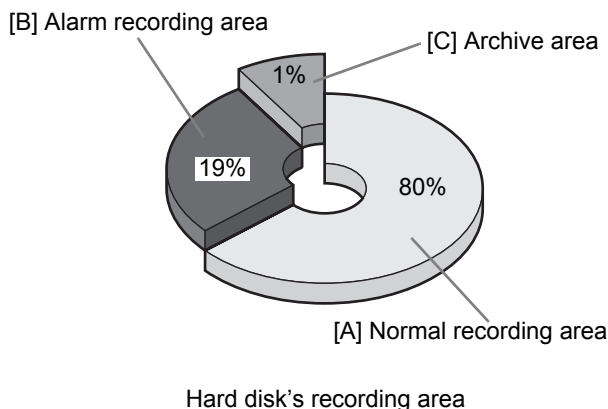
```
          <RECORDING AREA SET>
  TOTAL CAPACITY          :   81GB
  NORMAL RECORDING AREA   :   80 %  ──── [A]
      AREA FULL RESET  ->
  ALARM RECORDING AREA    :   19 %  ──── [B]
      AREA FULL RESET  ->
  ARCHIVE AREA            :    1 %  ──── [C]
      AREA FULL RESET  ->

  CAUTION : WHEN THE AREA SETTING IS CHANGED,
            THE WHOLE AREA WILL BE INITIALIZED !
```

[A] Normal recording area

Recording mode		Recording method
Normal recording	Manual	During monitoring, recording is performed when the [REC/STOP] button is pressed.
Timer recording	Automatic	Recording is carried out in accordance with timer settings.

[B] Alarm recording area

Recording mode		Recording method
Alarm recording	Automatic	Recording is carried out in accordance with alarm recording settings. Specifically, alarm images are recorded in the alarm recording area in response to operation of the switch that has been installed for the alarm input terminal or to detection of an intruder or the like using motion sensors.
Pre-alarm recording	Automatic	Recording is carried out in accordance with pre-alarm settings. Specifically, the same images as recorded normally over a preset time interval are repeatedly overwritten in the alarm recording area until an alarm occurs. Pre-alarm recording can be setup to have the digital video recorder record alarm images before an alarm input is detected.

[C] Archive area

Recording mode		Recording method
Copy	Manual	This area is used to copy important images from the normal recording area and alarm recording area. By making changes to the normal recording area and the alarm record-ing area, this area can be extended to up to 10 GB automatically.

Selecting the recording method

- If you want to record images while monitoring;...... P. 23
- If you want to record with an end time specified using timer settings;.. P. 23
- If you only want to record when an intruder is present;... P. 24, 67
- If you also want to record images from before the intruder appears; .... P. 25

OPERATION

2 SETTING THE LANGUAGE/CLOCK

[∧] button   [>] button

[MENU] button [∨] button [EXIT/OSD] button
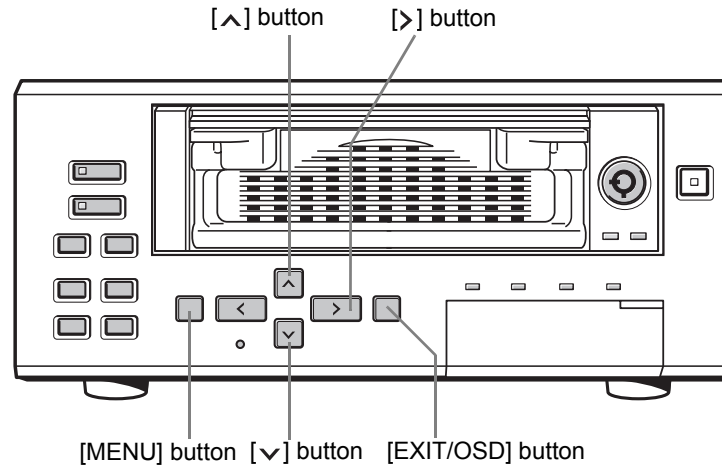
This section describes how to set the language displayed on the monitor and how to set the digital video recorder's internal clock.

[Settings] (◆ indicates default setting.)

Item	Setting	Description
(1)LANGUAGE SET	◆ENGLISH	Sets the language to English.
	FRANCAIS	Sets the language to French.
	ESPAÑOL	Sets the language to Spanish.
(2)CLOCK SET		Sets the date and time.

1 Press the [MENU] button.

The <MAIN MENU 1> screen appears.

```
           <MAIN MENU 1>
1. LANGUAGE/CLOCK SET      ->
2. VIDEO INPUT SET         ->
3. RECORDING AREA SET      ->
4. RECORDING CONDITIONS SET ->
5. NORMAL REC MODE SET     ->
6. TIMER SET               ->
7. HOLIDAY SET             ->
8. ALARM REC MODE SET      ->
TO MAIN MENU 2             ->
      SELECT : ↕↔,   SET : ENTER
```

2 Select "1. LANGUAGE/CLOCK SET" and press the [>] button.

The <LANGUAGE/LANGUE/IDIOMA> screen is displayed with the cursor positioned on "ENGLISH".

```
      <LANGUAGE/LANGUE/IDIOMA>
            ENGLISH
          <CLOCK SET>
   01-01-2004  THU  00:00:00
        <DAYLIGHT SAVING>
   MODE    :    USE
           WEEK   MONTH   TIME
   ON   1ST-SUN    04    02:00
   OFF  LST-SUN    10    02:00
        <EXT. CLOCK SET>
   ADJUST.TIME       01:00
```

To change the language

3 Press the [>] button, then the [∨] or [∧] button to select the desired language.

The set item flashes.

```
       REGL. LANGUE
         FRANCAIS
       <REGL. HORLOGE>
   01-01-2004  JEU  00:00:00
        <HEURE D'ETE>
   MODE    :    MARCHE
           SEMAINE  MOIS   HEURE
   ON   1ER-DIM     04    02:00
   OFF  DER-DIM     10    02:00
        <REGL.HORLOGE EXTERNE>
   REGL.DE L'HEURE    01:00
```
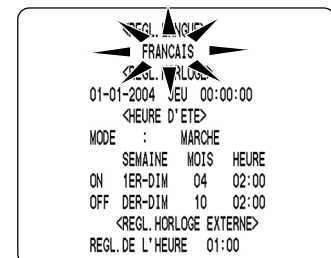
4 When you have made a selection, press the [>] button.

The cursor moves to the date and time.
The language has now been set.
To return to the normal screen, press the [EXIT/OSD] button.

Setting the time

(Default setting: 01-01-2004 THU 00:00:00)
Be sure to set the correct date and time. The digital video recorder stores the times of recordings for use in operations such as playback and search/playback.

Example: Setting May 20, 2004, 8:30

1   Press the [MENU] button.
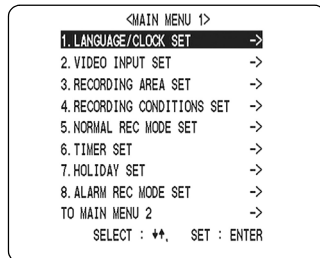
The <MAIN MENU 1> screen appears.

```
            <MAIN MENU 1>
1. LANGUAGE/CLOCK SET        ->
2. VIDEO INPUT SET           ->
3. RECORDING AREA SET        ->
4. RECORDING CONDITIONS SET  ->
5. NORMAL REC MODE SET       ->
6. TIMER SET                 ->
7. HOLIDAY SET               ->
8. ALARM REC MODE SET        ->
TO MAIN MENU 2               ->
        SELECT : ++,   SET : ENTER
```

2   Select "1. LANGUAGE/CLOCK SET" and press the [>] button.

The <LANGUAGE/LANGUE/IDIOMA> screen is displayed. The cursor is positioned on "ENGLISH".

```
    <LANGUAGE/LANGUE/IDIOMA>
           ENGLISH
         <CLOCK SET>
    01-01-2004 THU 00:00:00
       <DAYLIGHT SAVING>
MODE   :    USE
        WEEK   MONTH   TIME
ON   1ST-SUN    04     02:00
OFF  LST-SUN    10     02:00
       <EXT.CLOCK SET>
ADJUST.TIME        01:00
```
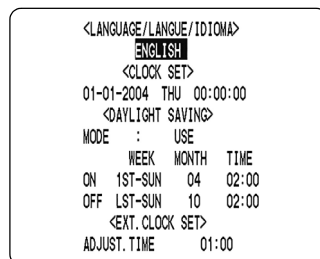
3   Press the [∨] or [∧] button to move the cursor to the date and time under <CLOCK SET>.

```
    <LANGUAGE/LANGUE/IDIOMA>
           ENGLISH
         <CLOCK SET>
    01-01-2004 THU 00:00:00
       <DAYLIGHT SAVING>
MODE   :    USE
        WEEK   MONTH   TIME
ON   1ST-SUN    04     02:00
OFF  LST-SUN    10     02:00
       <EXT.CLOCK SET>
ADJUST.TIME        01:00
```

```
01-01-2004   THU   00:00:00
  |  |   |          |       |
  |  |  YEAR      WEEK    TIME
  |  |
  | DAY
  |
MONTH
```

4   Press the [>] button.

"01" (indicating the month) flashes.

01 01-2004   THU   00:00:00

5   Press the [∨] or [∧] button to select "05".

05 01-2004   SAT   00:00:00

6   Press the [>] button.

"01" (indicating the day) flashes.

05 01 2004   SAT   00:00:00

7   Use the same procedure to set the day (20 in this example), year (2004), hour (08), and minute (30).

05-20-2004   THU   08:30:00

When you have set the minute, the cursor moves to "MODE" under <DAYLIGHT SAVING>, and the clock starts from 00 seconds.
● "WEEK" is set automatically.
● The time is stopped during clock setting.

8   Press the [EXIT/OSD] button.

The display returns to the normal screen.

OPERATION

[REC/STOP] button

[TIMER] button

FULL indicator

TIMER indicator
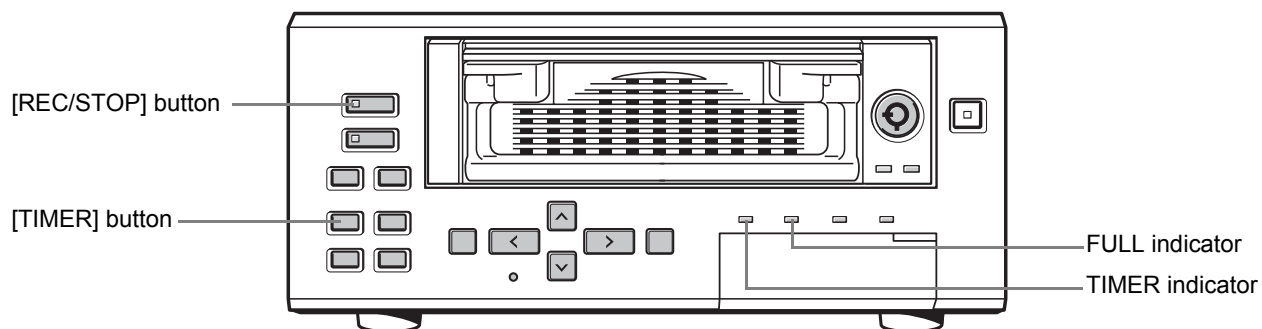
Normal recording

Follow the procedures below to record the monitored image in the normal recording area.

1 Press the [REC/STOP] button.

The REC/STOP indicator lights. "●" appears on the screen (i.e., the recording symbol), and recording starts.
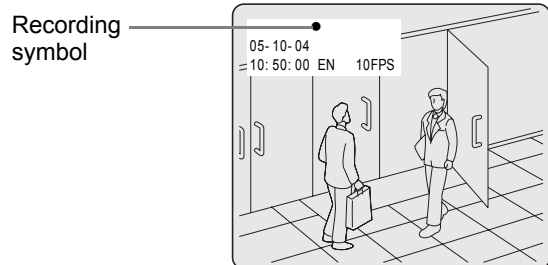
Recording symbol

05-10-04
10:50:00 EN   10FPS

NOTE ▶

● When you record for the first time, the default settings are used. For details regarding changing of the image quality or recording rate, see P. 59.
● When the space remaining in the normal recording area drops below the setting value, the FULL indicator lights and recording stops. You can start recording from the beginning again by changing the recording setting. (→P. 57)
● You can record and play back images at the same time. See P. 26 for the procedure.
● You cannot change the menu during recording.

Ending normal recording

2 Press the [REC/STOP] button for at least 2 seconds.

The REC/STOP indicator goes out and recording stops.

Timer recording

Follow the procedures below to record the monitored image in the normal recording area at the set time.

1 Press the [TIMER] button.

The TIMER indicator lights and the digital video recorder enters timer recording standby mode.

05-10-04
10:50:00 EN   10FPS
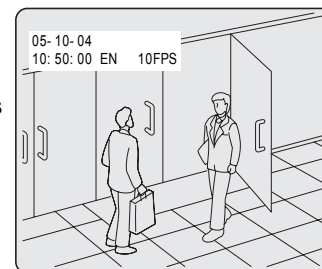
⚠ CAUTION

● A warning tone sounds if timer recording has not been set.
(1) See P. 60 for how to set timer recording.
(2) When the time specified in the timer settings arrives, the REC/STOP indicator lights, "●" (the recording symbol) appears in the screen, and recording starts.
(3) When the timer's end time arrives, the REC/STOP indicator goes out, and recording stops.

NOTE ▶

● When the space remaining in the normal recording area drops below the setting value, the FULL indicator lights and recording stops. You can start recording from the beginning again by changing the recording setting. (→P. 57)
● You can record and play back images at the same time. See P. 26 for the procedure.

Stopping during timer recording

2 Press the [TIMER] button.

The TIMER indicator turns off and recording stops.

ALARM FULL indicator

ALARM indicator

FULL indicator

[EXIT/OSD] button

OPERATION
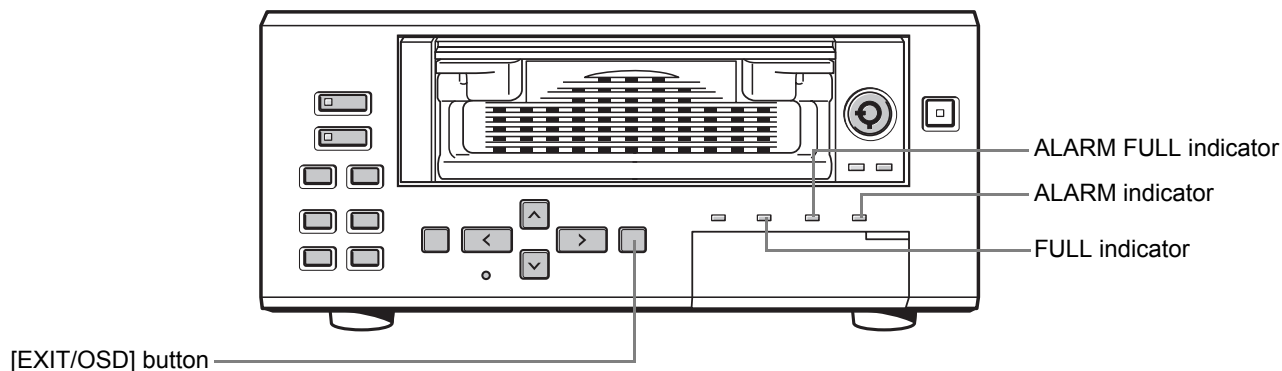
Alarm recording

Follow the procedures below to have the digital video recorder record an alarm image only when alarm input is detected.

⚠ **CAUTION**

● Confirm that the cable of the device required for alarms is connected to the ALARM terminal. (→P. 16)

NOTE ▶

● When the motion sensor is set, an alarm image is recorded when a moving subject is detected. (→P. 67)

1 Set alarm recording.

The default settings are shown below.
See P. 65 for how to change these settings.
● **"ALARM RECORDING": "OFF"**
Alarm recording is disabled.
● **"DURATION": "1 SEC"**
Recording is performed for 1 second for each alarm signal received while the alarm is set.

2 When alarm input is detected

When an alarm is generated, the display below appears in the operation display area, and an alarm image is recorded.

05-10-04 ALARM 0001
10:50:00 EN 10FPS

Counts the number of alarms.
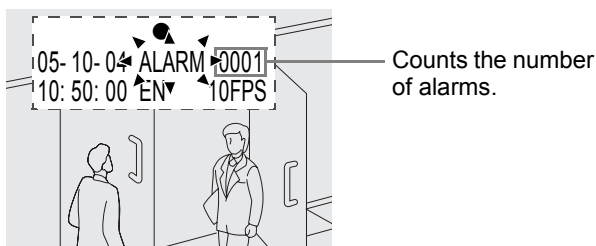
● "ALARM" appears in the operation display area.
● When an alarm is generated on a channel that is already alarm recording, the alarm recording time is

extended counting from that moment. The new alarm is not counted.
● The latest 9,999 alarms are displayed in the alarm history (recording list). (Although the history can record up to 16,000 items, only 9,999 of these can be displayed on-screen.)
● The panel's ALARM indicator flashes.
● If an alarm occurs during normal recording or timer recording, the recording operation will be ended, and it will restart after the end of alarm recording.

NOTE ▶

● When the normal recording area is set to "*1%", alarm recording is possible for the complete memory available in the alarm recording area. For "1%" and other settings, up to 16,000 items are recorded per hard disk. However, if set for *1%, "ALARM SEARCH", "ALARM THUMBNAIL SEARCH", and "MOTION DETECTION SEARCH" will not be available. Use "TIME/DATE SEARCH" instead.
Furthermore, since the alarm skip function will also be inactive, it will be necessary to carry out fast-forward and fast-rewind playback.

3 End alarm recording.

When the alarm duration time ends (default setting: 1 second), "ALARM" disappears from the operation display, the ALARM indicator stops flashing, and recording stops.

NOTE ▶

● When the space remaining in the alarm recording area drops below the setting value, the FULL indicator lights and recording stops. You can start recording from the beginning again by changing the recording setting. (→P. 57)

■ **If recording is ended during alarm recording using the motion sensor**
Set "LEVEL" from the motion sensor screen to "OFF". (→P. 67)

Pre-alarm recording

Follow the procedures below to have the digital video recorder record an image from before detection of an alarm and the start of alarm recording.

1 Set pre-alarm recording.

Follow the procedures on P. 64 to set "8. ALARM REC MODE SET" on the <MAIN MENU 1> screen to "PRE-ALARM RECORDING".

```
              <MAIN MENU 1>
1. LANGUAGE/CLOCK SET        ->
2. VIDEO INPUT SET           ->
3. RECORDING AREA SET        ->
4. RECORDING CONDITIONS SET  ->
5. NORMAL REC MODE SET       ->
6. TIMER SET                 ->
7. HOLIDAY SET               ->
8. ALARM REC MODE SET        ->
TO MAIN MENU 2               ->
        SELECT : ↓↑,   SET : ENTER
```
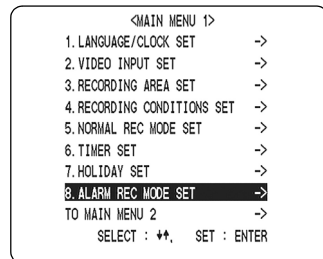
2 Following this, press the [EXIT/OSD] button.

The display returns to the normal screen.
"PRE" is displayed in the operation display area and the ALARM indicator lights. Pre-alarm recording starts (without displaying a symbol).

```
05-10-04 PRE     0001
20:10:00 EN     10FPS
```
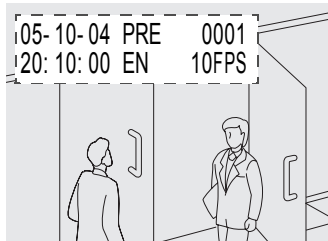
Until an alarm signal is received, video will be recorded in a repetitive fashion in a section of the alarm recording area as set for pre-alarm recording by "DURATION".

If an alarm is detected

Pre-alarm recording is automatically ended and alarm recording starts.
● "PRE" from the operation display area is replaced by "ALARM" and the ALARM indicator flashes.
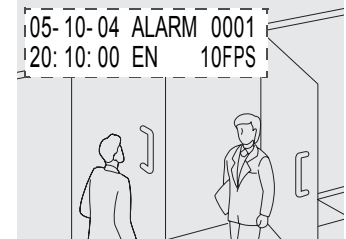
```
05-10-04 ALARM  0001
20:10:00 EN     10FPS
```

NOTE ▶

● When you record for the first time, the default settings are used. For details regarding changing of the image quality or recording rate, see P. 64.
● When the space remaining in the alarm recording area drops below the setting value, the ALARM FULL indicator lights and recording stops. You can start recording from the beginning again by changing the recording setting. (→P. 57)

ALARM FULL indicator

5 NORMAL RECORDING/TIMER RECORDING PLAYBACK
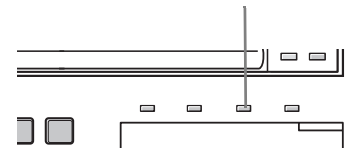
Follow the procedures below to playback images stored in the normal recording area (by normal recording or timer recording).

Normal recording area

[PLAY/STOP] button

[∧] button

[‹] button
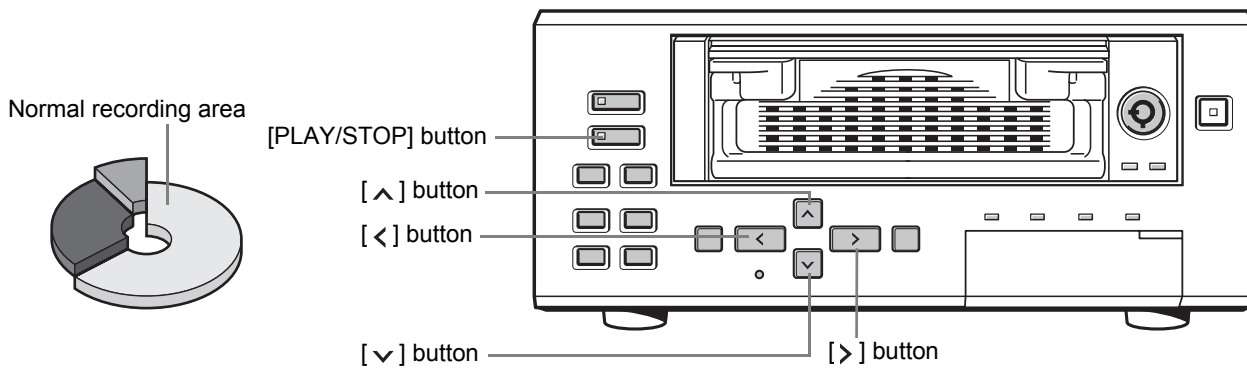
[∨] button

[›] button

Playback

1 Press the [PLAY/STOP] button.

The PLAY/STOP indicator lights, and " ▶ " appears in the operation display area. The images stored in the normal recording area are played back.

Operation display

```
        ▶
05-10-04 ALARM 0001
10:50:00 EN    10FPS
```
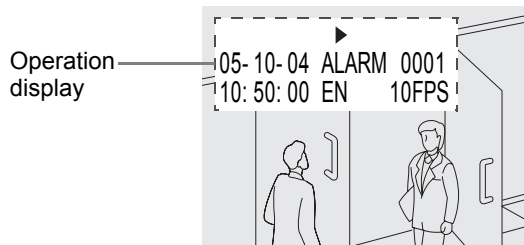
NOTE ▶

● Image playback starts from the point at which recording started.
● If "OVERWRITE" has been set in the normal recording settings, playback starts with the oldest recorded image when the recording is played back for the first time.
● When playback ends, the digital video recorder pauses automatically.
● While stopped, " ‖ " is displayed in the operation display area.
● After playback is stopped, it will resume from the stopped point the next time it is started.

Ending playback

2 Press the [PLAY/STOP] button.

Playback ends.

■ Playing back an image near the point of recording

The digital video recorder prioritizes recording operations, so the playback image may pause temporarily.

Fast-forward playback/fast-rewind playback

During playback, press the [›] or [‹] button.
When you press the [›] button, " ▶▶ " appears in the operation display, and the playback fast-forwards.
When you press the [‹] button, " ◀◀ " appears in the operation display, and the playback fast-rewinds.

Fast-forward playback symbol

```
      ▶▶
01-01-04 ALARM  0023
00:10:02 EN    10FPS
```
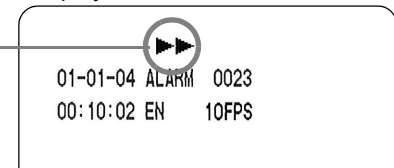
To change the fast-forward playback/fast-rewind playback speed

Press the [∨] or [∧] button while fast-forward/rewind.
The speed changes by one increment/decrement each time you press the button.

Ending fast-forward playback/fast-rewind playback

Press the [PLAY/STOP] button.
Playback ends and live image is displayed.

Viewing still images

[STILL] button
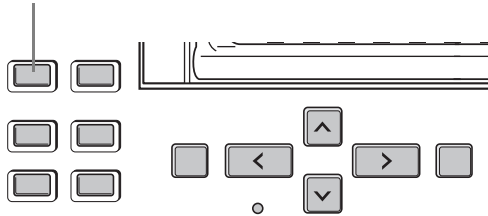
1 During playback, press the [STILL] button.

" ❚❚ " appears in the operation display area and the image is still. The PLAY/STOP indicator flashes in green.

Still symbol

05-10-04
= 10:50:00 EN   10FPS
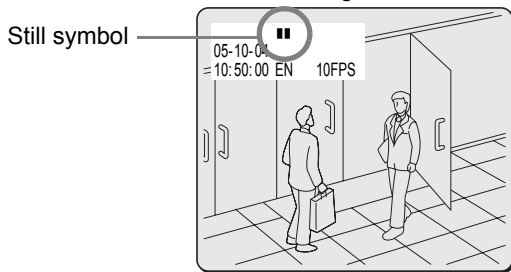
To resume playback

2 Press the [STILL] button.

The PLAY/STOP indicator lights in green.

Frame advance (forward/reverse)

[STILL] button   [⟨] button   [⋀] button
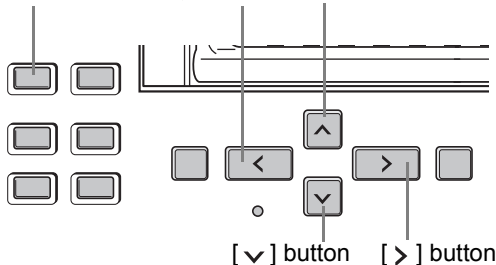
[⋁] button   [⟩] button

Press the [⋀] button while a still image is displayed.
The still image advances by one frame.

Press the [⋁] button while a still image is displayed.
The still image moves back by one frame.

Slow playback or fast-forward

During playback, press the [⋁] or [⋀] button.
The speed changes by one increment/decrement each time you press the button.

Slow reverse playback or fast-rewind

During reverse playback, press the [⋁] or [⋀] button.
The speed changes by one increment/decrement each time you press the button.

⚠ CAUTION

● When the images from each recording area are played back in succession, the quality of the picture may drop momentarily as playback switches from one recording area to another.
● If normal, fast-forward, or fast-rewind playback is carried out either for playback during alarm recording or continuous playback from the normal recording area and alarm recording area, the image may seem to have paused in certain cases.

Playback with a channel specified for the camera image

If a multiplexer (sold separately) is connected to this unit and images are recorded from multiple cameras, you can specify the number (or channel) of the camera whose recording is to be played back using the following procedure.
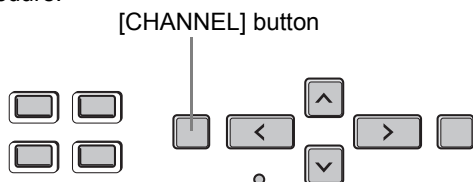
[CHANNEL] button

NOTE

● Refer to P. 17 for more details on connecting this digital video recorder to a multiplexer and refer to P. 52 for more details on settings for multiplexer connection.

1 **Press the [CHANNEL] button while a still image is displayed.**

A screen allowing you to select the number of a camera connected to the multiplexer is displayed.

```
PLEASE SELECT CHANNEL

-- CHANNEL

CHANGE : ↓↑,   SET : ENTER
```
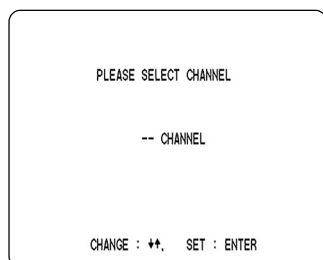
2 **Press the [∨] or [∧] button to specify a channel.**

(Example: Camera 4)

```
PLEASE SELECT CHANNEL

4 CHANNEL

CHANGE : ↓↑,   SET : ENTER
```
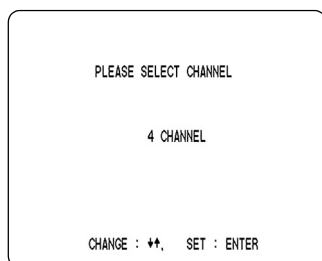
3 **Press the [>] button.**

" ▶ " appears in the operation display area and the images from the specified channel are played back.

```
CH 4        ▶
05-10-04
20:10:00  EN   10FPS
```
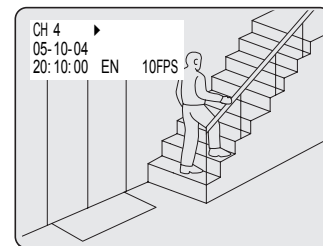

⚠️ **CAUTION**

● The specification of a channel for playback will only be possible when a multiplexer capable of decoding the channel information (i.e., channel number) is connected.
● When this operation is carried out, only the specified channel is played back. No other channels will be displayed.
● When a channel is selected, the multiplexer title information, date information, and/or time information may partially disappear.

Switching between frame and field playback

[SEARCH] button
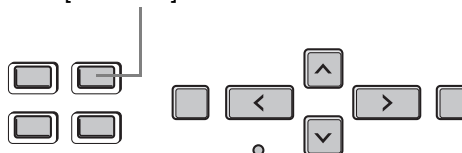
1 **Press the [SEARCH] button while the digital video is playing back frame-recorded images.**

Each time you press the button, the screen toggles between frame and field playback.

⚠️ **CAUTION**

● Switching between frame and field playback can only be carried out for frame-recorded images.
● Fast-moving images that have been frame recorded may appear shaky during playback.

OPERATION

28 English

Images stored in the alarm recording area or archive area can be located by searching and then played back. Five different search methods are available.

Archive area

Alarm recording area

[SEARCH] button
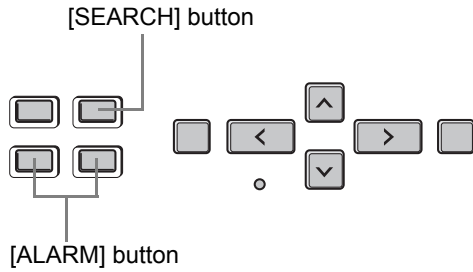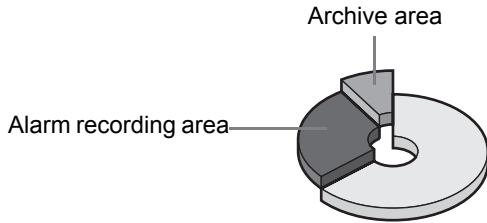
[ALARM] button

Image to search for

Search in <SEARCH> screen

```
                    <SEARCH>
(1) ──── ALARM SEARCH              ->
(2) ──── ALARM THUMBNAIL SEARCH    ->
(3) ──── TIME/DATE SEARCH          ->
(4) ──── ARCHIVE AREA SEARCH       ->
(5) ──── MOTION DETECTION SEARCH   ->



              SELECT : ↓↑,   SET : ENTER
```
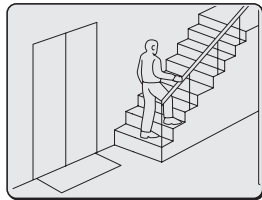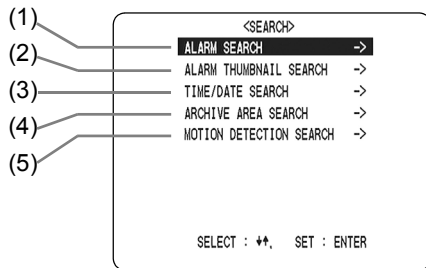
> **NOTE**
> ● You can use the button operations to pause, fast-forward, or perform other operations on retrieved images being played back.

(1) ALARM SEARCH (→P. 30)
Lets you search and play back alarm images from the recording list.

```
                  <ALARM SEARCH>
    NO   DATE   TIME      TOTAL ALARMS
    0007 01-20  01:06        00123
    0006 01-20  02:04
    0005 01-20  02:07
    0004 01-21  01:03
    0003 01-21  03:05
    0002 01-21  06:02
    0001 01-21  07:04

           SELECT : ↓↑,   SET : ENTER
```

(2) ALARM THUMBNAIL SEARCH (→P. 31)
Lets you search and play back alarm images using thumbnails.

```
   ┌──────┬──────┬──────┐
   │ 0016 │ 0015 │ 0014 │
   ├──────┼──────┼──────┤
   │ 0013 │ 0012 │ 0011 │
   ├──────┼──────┼──────┤
   │ 0010 │ 0009 │ 0008 │
   └──────┴──────┴──────┘
```

(3) TIME/DATE SEARCH (→P. 31)
Lets you search and play back recorded images by date/time.

```
              <TIME/DATE SEARCH>
   RECORDING TOP   :   01-20-04  01:00
   RECORDING END   :   12-20-04  01:00

   SEARCH :
       DATE      TIME
      05-20-04  12:00
       PREVIEW   ->
       VIEW      ->

         CHANGE : ↓↑,   SET : ENTER
```

(4) ARCHIVE AREA SEARCH (→P. 33)
Lets you search and play back recorded images stored (or copied) to the archive area.

```
                <ARCHIVE AREA SEARCH>
   NO   DATE  START        CAPACITY
   0001 01-02 06:55      TOTAL -  812MB
   0002 01-02 06:35      USED  -   83MB
   0003 01-02 06:35
   0004 01-02 06:35
   0005 01-02 06:35
   0006 01-02 06:35
   0007 01-02 06:35

         SELECT : ↓↑,   SET : ENTER
```

(5) MOTION DETECTION SEARCH (→P. 33)
Lets you search and play back recorded images of moving objects detected by motion sensors.

```
        <MOTION DETECTION SEARCH>
   SEARCH FROM : ALARM      / CHANNEL : --

     START :
       01-20-04  01:06
     END   :
       10-01-04  01:00
     MOTION SENSOR  ->
     PREVIEW        ->
     VIEW           ->
          SELECT : ↓↑,   SET : ENTER

                            LEVEL : OFF      EXIT
```

ALARM SEARCH

Lets you search and play back all the alarm images stored in the alarm recording area. If pre-alarm images are being recorded, playback will start from immediately before the alarm.

[SEARCH] button   [∧] button   [>] button

[ALARM] button   [∨] button

1 Press the [SEARCH] button while the digital video recorder is recording or stopped.

The <SEARCH> screen is displayed.

```
              <SEARCH>
ALARM SEARCH               ->
ALARM THUMBNAIL SEARCH     ->
TIME/DATE SEARCH           ->
ARCHIVE AREA SEARCH        ->
MOTION DETECTION SEARCH    ->




        SELECT : ↕,   SET : ENTER
```

2 Check that "ALARM SEARCH" is selected, and press the [>] button.

The <ALARM SEARCH> screen is displayed.

(1)   (2)   (3)

```
              <ALARM SEARCH>
NO   DATE   TIME      TOTAL ALARMS
0007 01-20 01:06         00123
0006 01-20 02:04
0005 01-20 02:07
0004 01-21 01:03
0003 01-21 03:05
0002 01-21 06:02
0001 01-21 07:04
        SELECT : ↕,   SET : ENTER
```

(4)

(1) NO:
Displays the alarm number.

(2) DATE/TIME:
Displays the date/time at which the alarm was received and the image recorded.

(3) TOTAL ALARMS:
Displays the total number of recorded alarm images.

(4) Preview screen:
Displays the selected alarm image.

3 Press the [∨] or [∧] button to select the image to play back.

The selected alarm image is displayed in the preview screen. You can display up to 8 alarm images.
● **To display the next (previous) image**
Press the [∨] or [∧] button.
● **To display the items on the next page**
Press the [ALARM] button. The next 8 items are displayed chronologically.
● **To end search mode**
Press the [SEARCH] button.

4 Press the [>] button.

The selected image is played back on the full screen.
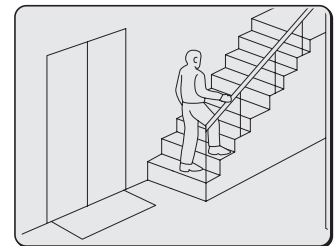
■ To display pre-alarm images
After starting playback of alarm images found using an alarm search, press the [<] button to activate reverse playback.

| Skipping can be carried out during playback |

1 During playback, press the [ALARM] button.

```
  ‖
05-20-04  ALARM  0003
01:06:00  EN      10FPS
```
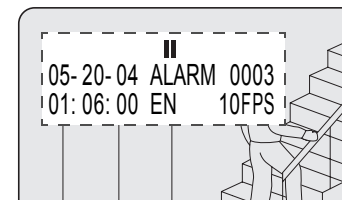
● Playback will skip to the next earlier alarm image when the ⏮ button is pressed.
● Playback will skip to the next later alarm image when the ⏭ button is pressed.

NOTE ▶

● When playback is performed using an alarm search, the image at the start and end of each alarm recording will be paused.
Play the final alarm image using the [ALARM] button.

OPERATION

ALARM THUMBNAIL SEARCH

All alarm images stored in the alarm recording area can be displayed as thumbnails.
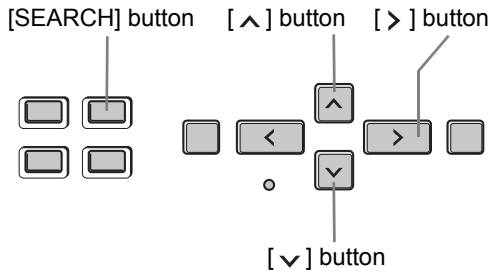
[SEARCH] button   [∧] button   [>] button

[∨] button

1 **Press the [SEARCH] button while the digital video recorder is recording or stopped.**

The <SEARCH> screen is displayed.

2 **Press the [∨] or [∧] button to select "ALARM THUMBNAIL SEARCH".**

```
              <SEARCH>
ALARM SEARCH              ->
ALARM THUMBNAIL SEARCH    ->
TIME/DATE SEARCH          ->
ARCHIVE AREA SEARCH       ->
MOTION DETECTION SEARCH   ->



    SELECT : ↕,   SET : ENTER
```

3 **Press the [>] button.**

The 9 most-recent alarm images are displayed.
An alarm number is indicated in each alarm image, and the number of the currently selected alarm will flash.

0016	0015	0014
0013	0012	0011
0010	0009	0008

4 **Press the [∨] or [∧] button to move the cursor and select the image to play back.**

The alarm number for the selected image will start to flash.
● **To display the image on the next (previous) page**
   Press the [ALARM] button. The image of the next (previous) page is displayed as a thumbnail.
● **To end search mode**
   Press the [SEARCH] button.

5 **Press the [>] button.**

The selected image is played back on the entire screen.

! **CAUTION**

● In the same way as for alarm searching, playback is only possible within each alarm recording. Play the previous or subsequent alarm image using the [ALARM] button.

TIME/DATE SEARCH

Follow the procedures below to play back an image recorded in the hard disk's normal recording area (i.e., normal recording and timer recording images) or alarm recording area by specifying its date and time.
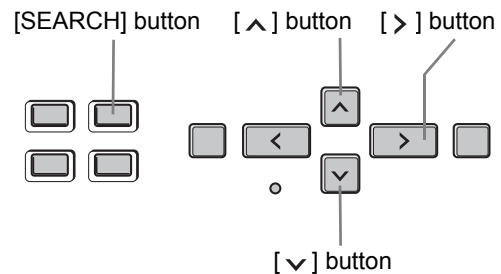
[SEARCH] button   [∧] button   [>] button

[∨] button

1 **Press the [SEARCH] button while the digital video recorder is recording or stopped.**

The <SEARCH> screen is displayed.

2 **Press the [∨] or [∧] button to select "TIME/DATE SEARCH".**

```
              <SEARCH>
ALARM SEARCH              ->
ALARM THUMBNAIL SEARCH    ->
TIME/DATE SEARCH          ->
ARCHIVE AREA SEARCH       ->
MOTION DETECTION SEARCH   ->



    SELECT : ↕,   SET : ENTER
```
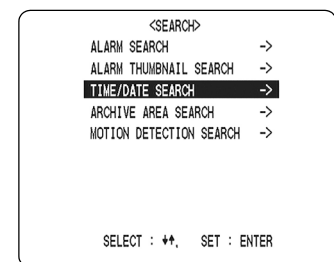
3 Press the [>] button.

The <TIME/DATE SEARCH> screen is displayed.
The cursor is positioned on the date and time item.

```
              <TIME/DATE SEARCH>
(1)───  RECORDING TOP  :   01-20-04  01:00
(2)───  RECORDING END  :   12-20-04  01:00

(3)───  SEARCH :
           DATE      TIME
(4)───   05-20-04  12:00
         PREVIEW    ->
(5)───   VIEW       ->

              CHANGE : ↕,   SET : ENTER
```
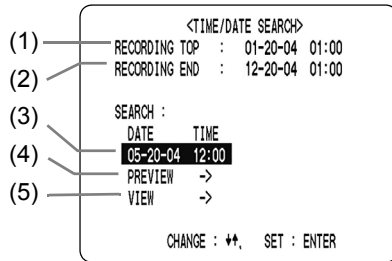
(1) RECORDING TOP:
Displays the date/time of the image recorded first.

(2) RECORDING END:
Displays the date/time of the image recorded last (latest image).

(3) SEARCH:
Enter the date/time of the image to play back.

(4) PREVIEW:
Displays the preview screen.

(5) VIEW:
Select this item to play back the image on the entire screen.

4 Press the [>] button and set the date/time to search.

Example: To search for the image from October 26, 2004, 20:00

```
10-26-04  20:00              <TIME/DATE SEARCH>
                        RECORDING TOP  :   01-20-04  01:00
┬   ┬   ┬   ┬   ┬       RECORDING END  :   12-20-04  01:00
(1) (2) (3) (4) (5)
                        SEARCH :
                           DATE      TIME
                         10-26-04  20:00
                         PREVIEW    ->
                         VIEW       ->

                              CHANGE : ↕,   SET : ENTER
```
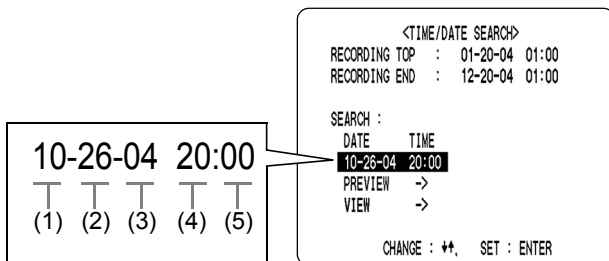
(1) Press the [∨] or [∧] button to select "10" (the month).
(2) Press the [>] button, then the [∨] or [∧] button to select "26" (the day).
(3) Press the [>] button, then the [∨] or [∧] button to select "04" (the year).
(4) Press the [>] button, then the [∨] or [∧] button to select "20" (the hours).
(5) Press the [>] button to select "00" (the minutes), then press the [>] button.

The cursor moves to "PREVIEW".

```
              <TIME/DATE SEARCH>
         RECORDING TOP  :   01-20-04  01:00
         RECORDING END  :   12-20-04  01:00

         SEARCH :
            DATE      TIME
          10-26-04  20:00
          PREVIEW    ->
          VIEW       ->

              CHANGE : ↕,   SET : ENTER
```
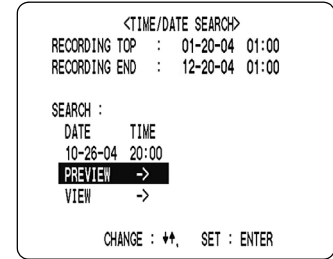
5 Press the [>] button.

Images are searched and a preview is displayed.
● **If no image exists for the specified time**
  The image for the time closest to the specified time is displayed.
● **To end search mode**
  Press the [SEARCH] button.

```
              <TIME/DATE SEARCH>
         RECORDING TOP  :   01-20-04  01:00
         RECORDING END  :   12-20-04  01:00

         SEARCH :
            DATE      TIME
          10-26-04  20:00
          PREVIEW    ->
          VIEW       ->

              CHANGE : ↕,   SET : ENTER
```
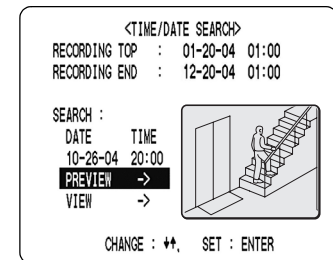
6 Press the [∨] button to select "VIEW", then press the [>] button.

The selected image is played back on the entire screen.

```
              <TIME/DATE SEARCH>
         RECORDING TOP  :   01-20-04  01:00
         RECORDING END  :   12-20-04  01:00

         SEARCH :
            DATE      TIME
          10-26-04  20:00
          PREVIEW    ->
          VIEW       ->

              CHANGE : ↕,   SET : ENTER
```
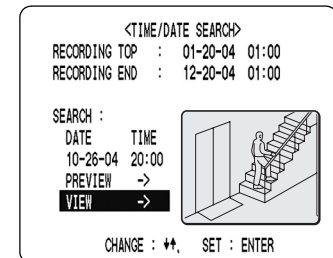
| NOTE |

● The retrieved image can be displayed on the entire screen without displaying the preview screen by entering the date and time, and by then selecting "VIEW".
● You can use the button operations to pause, fast-forward, or perform other operations on retrieved images being played back.
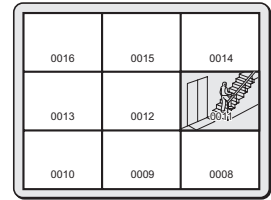
OPERATION

ARCHIVE AREA SEARCH

Follow the procedures below to playback images from the archive area.

1 Press the [SEARCH] button while the digital video recorder is recording or stopped.

The <SEARCH> screen is displayed.

2 Press the [∨] or [∧] button to select "ARCHIVE AREA SEARCH".

```
              <SEARCH>
ALARM SEARCH            ->
ALARM THUMBNAIL SEARCH  ->
TIME/DATE SEARCH        ->
ARCHIVE AREA SEARCH     ->
MOTION DETECTION SEARCH ->



        SELECT : �,   SET : ENTER
```

3 Press the [>] button.

The <ARCHIVE AREA SEARCH> screen is displayed.

```
        (1)  (2)  (3)                  (4) (5)

              <ARCHIVE AREA SEARCH>
NO   DATE  START        CAPACITY
0001 01-02 06:55    TOTAL -  812MB
0002 01-02 06:35    USED  -   83MB
0003 01-02 06:35
0004 01-02 06:35
0005 01-02 06:35
0006 01-02 06:35
0007 01-02 06:35

        SELECT : �,   SET : ENTER
```
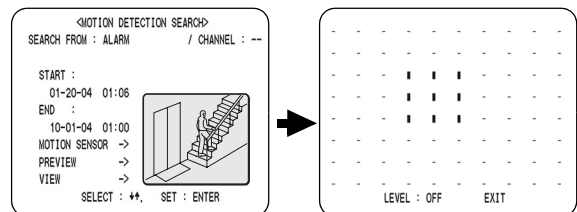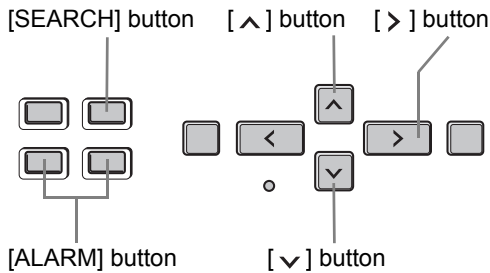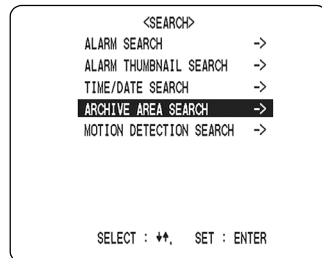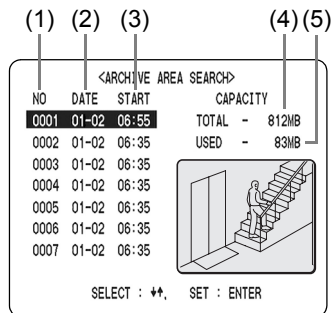
(1) NO: Displays the archive number.
(2) DATE: Displays the date of the recorded image.
(3) START: Displays the start time for the recorded image.
(4) TOTAL: Displays the total capacity of the archive area.
(5) USED: Displays the amount of archive area capacity currently filled.

4 Press the [∨] or [∧] button to select the image for playback.

The selected image is displayed in the preview screen.
- To display the next (previous) image
  Press the [∨] or [∧] button.
- To end search mode
  Press the [SEARCH] button.

5 Press the [>] button.

The image is played back on the full screen.

MOTION DETECTION SEARCH

By setting images recorded in the hard disk's normal recording area (i.e., normal recording and timer recording images) or alarm recording area to the motion sensor, variations from these images as a result of the presence of an intruder or the like can be detected, and the corresponding images can be played back.

⚠ CAUTION
- When performing a motion detection search for a multiplexer image, set "MULTIPLEXER" from "2. VIDEO INPUT SET" to anything other than "NO USE". (→P. 52)
- When a multiplexer capable of decoding channel information is connected, a camera number (or channel) can be specified, and the corresponding camera image can be detected. This type of setting will not be possible for any other type of multiplexer. (→P. 28)
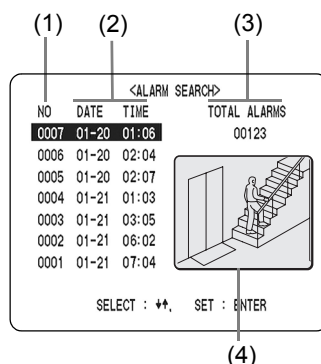
1 Press the [SEARCH] button while the digital video recorder is recording or stopped.

The <SEARCH> screen is displayed.

2 Press the [∨] or [∧] button to select "MOTION DETECTION SEARCH", then press the [>] button.

The <MOTION DETECTION SEARCH> screen is displayed.

```
        <MOTION DETECTION SEARCH>
SEARCH FROM :  ALARM
     START  :  10-01-04  10:00
     END    :  10-01-04  23:00

CHANNEL     :  --

START PREVIEW    ->


        SELECT : �,   SET : ENTER
```
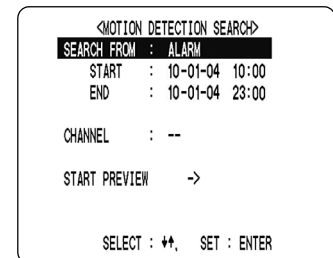
3 Press the [∨] or [∧] button to select "SEARCH FROM", then press the [>] button.

"ALARM" flashes.
[Settings] (◆ indicates default setting.)

Setting	Description
◆ALARM	Searching will only be performed for images in the alarm recording area.
NORMAL	Searching will only be performed for images in the normal recording area.
ALARM & NORMAL	Searching will be performed for images in the alarm recording area and normal recording area.

4 Press the [∨] or [∧] button to select the searching range, then press the [>] button.

(Example: Normal)
The cursor moves to "CHANNEL".

```
END     :  10-01-04  23:00

CHANNEL    :  --
```
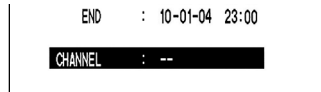
! CAUTION

● When "NO USE" is set for "MULTIPLEXER" (→P. 52) in "2. VIDEO INPUT SET", the cursor will move to "START PREVIEW".

5 Press the [>] button, then the [∨] or [∧] button to select a camera number.

The channel number flashes.

```
END     :  10-01-04  23:00

CHANNEL        4

START PREVIEW     ->
```

6 Press the [>] button.

(Selection example: 4)
The cursor moves to "START PREVIEW".

```
CHANNEL    :   4

START PREVIEW      ->
```

7 Press the [>] button.

The screen changes and the preview screen for camera number "4" appears.

```
        <MOTION DETECTION SEARCH>
SEARCH FROM  :  ALARM
     START   :  10-01-04  10:00
     END     :  10-01-04  23:00

CHANNEL      :   4

START PREVIEW     ->    SEARCHING


        SELECT : ↕,   SET : ENTER
```

```
        <MOTION DETECTION SEARCH>
SEARCH FROM : ALARM      / CHANNEL :  4

(1) ──── START :
         10-01-04  10:00
(2) ──── END   :
         10-01-04  23:00
(3) ──── MOTION SENSOR  ->
(4) ──── PREVIEW        ->
(5) ──── VIEW           ->
        SELECT : ↕,   SET : ENTER
```
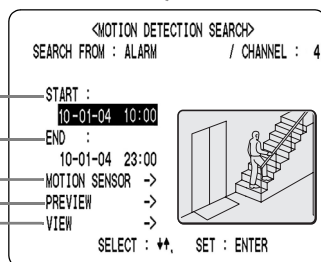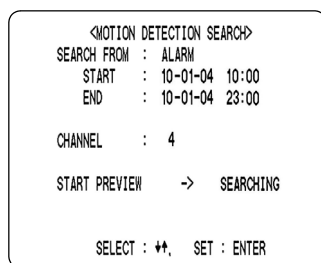
(1) START:
The date and time for the initial screen stored in each recording area are displayed.

(2) END:
The date and time for the final screen stored in each recording area are displayed.

(3) MOTION SENSOR:
The motion sensor is displayed.

(4) PREVIEW:
The selected start time is displayed.

(5) VIEW:
The selected image is played back on the entire screen.

8 Set the motion sensor.

(1) Press the [>] button.
(2) Press the [∨] or [∧] button to set the start date and time (i.e., 10 AM on the same day) for the motion sensor, then press the [>] button.
    The image for the selected time is displayed in the preview screen. The cursor moves to the end date and time.

```
        <MOTION DETECTION SEARCH>
SEARCH FROM : ALARM      / CHANNEL :  4

         START :
Set the start date  10-01-04  10:00
and time         END   :
         10-01-04  23:00
         MOTION SENSOR  ->
         PREVIEW        ->
         VIEW           ->
        SELECT : ↕,   SET : ENTER
```
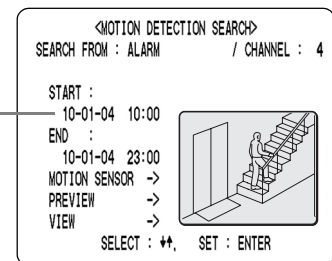
(3) Press the [>] button.
(4) Press the [∨] or [∧] button to set the end date and time (i.e., 8 PM on the same day) for the motion sensor, then press the [>] button. The cursor moves to "MOTION SENSOR".

```
        <MOTION DETECTION SEARCH>
SEARCH FROM : ALARM      / CHANNEL :  4

         START :
         10-01-04  10:00
         END   :
Set the end date  10-01-04  20:00
and time         MOTION SENSOR  ->
         PREVIEW        ->
         VIEW           ->
        SELECT : ↕,   SET : ENTER
```

OPERATION

34 English
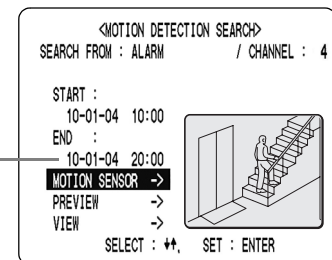
9 Press the [>] button.

The motion sensor setting screen is displayed.
Motion sensors should be set at locations where movement is to be detected and viewed.
See "Setting the motion sensor" (→P. 67) for details.

Setting example
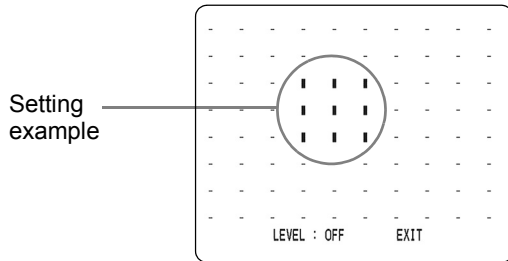
10 Move the cursor to "EXIT" and press the [∨] or [∧] button.

The display returns to the <MOTION DETECTION SEARCH> screen.

11 Press the [∨] or [∧] button to select "PREVIEW".
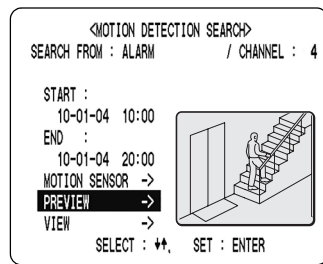
12 Press the [>] button.

Each time the [>] button is pressed, a different motion sensor screen will be displayed on the preview screen.

■ If "NOT FOUND!" is displayed

No motion sensors have been set. A motion sensor must be set to allow a screen to be displayed.

Viewing a motion sensor on-screen

1 Press the [∨] or [∧] button to select "VIEW".

2 Press the [>] button.

Normal playback will be started for the specified image.

! CAUTION

Using this unit in combination with a multiplexer
● By specifying the camera number (or channel) and performing "MOTION DETECTION SEARCH", playback can be carried out for only the specified camera number.
  In such a case, the multiplexer title information, date information, and/or time information may partially disappear.
● To playback an image from a different camera, stop playback and then repeat the setting process from the beginning.

7 SAVING & COPYING RECORDED IMAGES

Important images stored in the normal recording area or the alarm recording area can be copied to the unit's archive area, a CompactFlash card, or a Microdrive.

Copying an image to the hard disk's archive area (→P. 36)
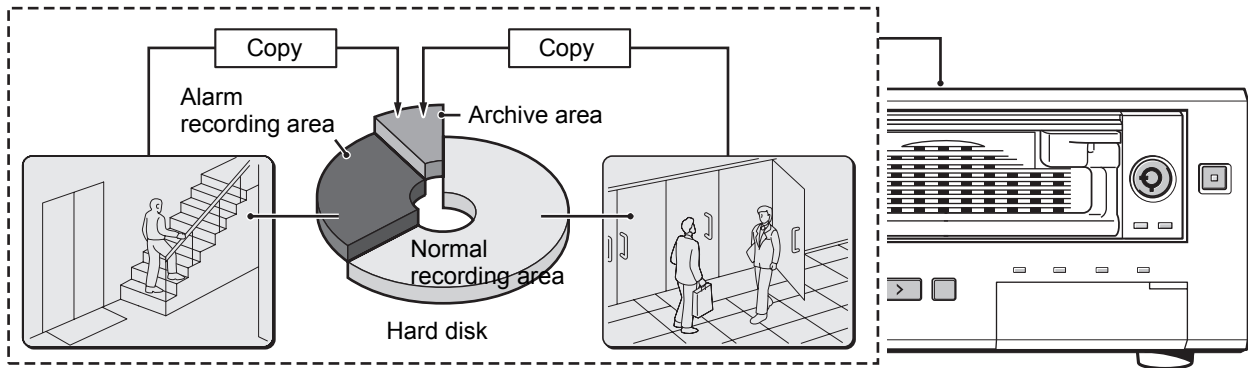
Copying an image to a CompactFlash card or Microdrive (→P. 38)
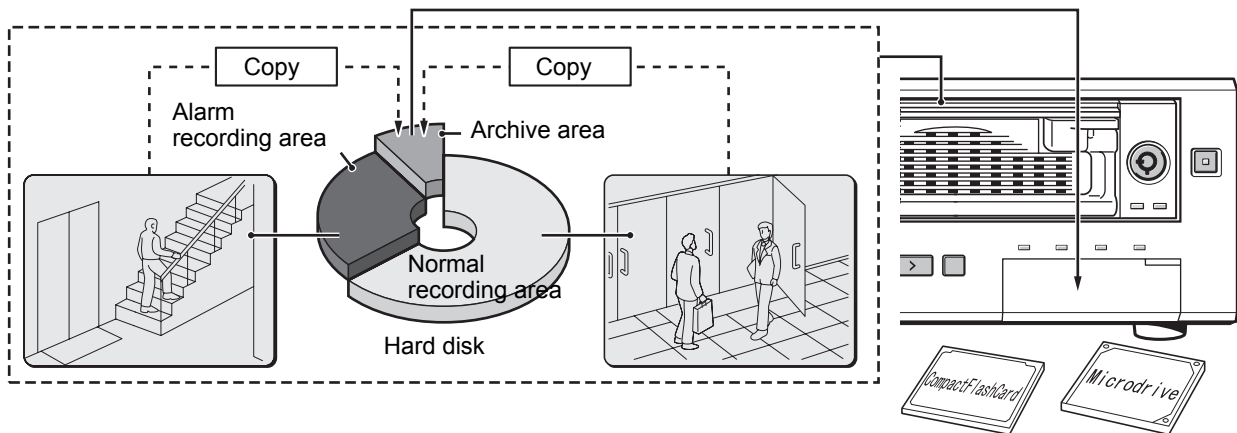
⚠ CAUTION

- Copied data is stored as a single image.
- When images are being downloaded to a CompactFlash card, they are stored in the archive area temporarily and are then copied from there to the CompactFlash card. As a result, it will not be possible to copy data to a CompactFlash card when the archive area is full.
- If there is no more room for images in the archive area, perform initialization using "AREA FULL RESET" from "ARCHIVE AREA" of "3. RECORDING AREA SET" of <MAIN MENU 1>. (→P. 54) Initialization will result in all images being deleted; consequently, important images should be copied from the archive area to a CompactFlash card before this procedure is carried out.
- Audio will not be copied together with images from the archive area to a CompactFlash card. (Audio will be copied together when copying images from the normal recording area or alarm recording area.)
- The application DVR Viewer will be needed in order to playback images and audio copied to a CompactFlash card on a PC. Version 1.4.7 of this application can be installed from the CD-ROM supplied with this digital video recorder.

Copying an image to the hard disk's archive area

[PLAY/STOP] button

[STILL] button — [COPY] button
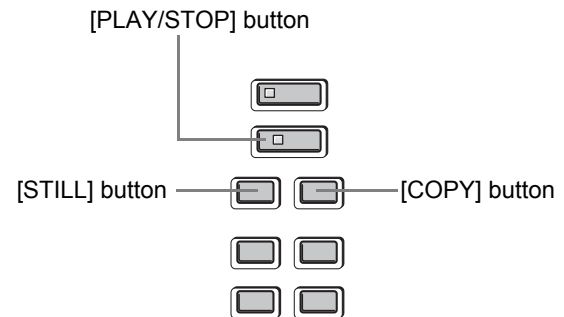
1 Play an image from the normal recording area or the alarm recording area.

2 Press the [STILL] button when the image to be copied is displayed.

Playback of the image is still.

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| Example: Copying a specified 10-minute image |

3 Press the [COPY] button.

The copy setting screen appears.
The cursor moves to "COPY TO".

```
COPY TO : COMPACT FLASH

HOW MANY :  1 PICTURES

      START    ->

FORMAT COMPACT FLASH ->

CHANGE : ↓↑,  SET : ENTER
```
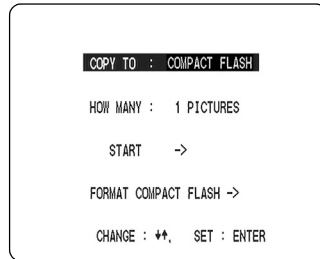
4 Press the [>] button, then the [∨] or [∧] button to set the copy destination to "ARCHIVE AREA".

```
COPY TO  :  ARCHIVE AREA

HOW MANY :   1 PICTURES

      START    ->

FORMAT COMPACT FLASH ->

CHANGE : ↓↑,  SET : ENTER
```
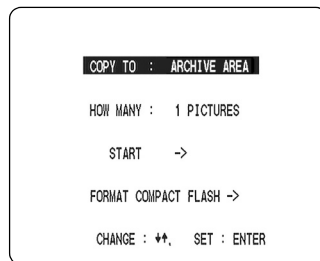
[Settings] (◆ indicates default setting.)

Setting	Description
◆ARCHIVE AREA	Copy to the archive area
COMPACT FLASH	Copy to a CompactFlash card

5 Press the [>] button.

The cursor moves to "HOW MANY".

6 Press the [>] button, then the [∨] or [∧] button to set the copy number to "10".

Any value between 1 and 60 can be set.

```
COPY TO  :  ARCHIVE AREA

HOW MANY :   1 PICTURES

      START   ->

FORMAT COMPACT FLASH ->

CHANGE : ↓↑,  SET : ENTER
```
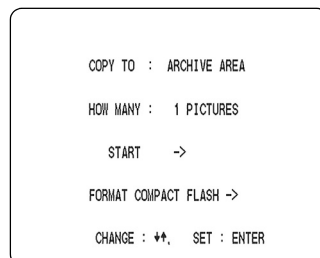
```
HOW MANY :  10 PICTURES
```

7 Press the [>] button, then the [∨] or [∧] button to select "MINUTES".

```
COPY TO  :  ARCHIVE AREA

HOW MANY :  10 MINUTES
```

[Settings] (◆ indicates default setting.)

Setting	Description
◆PICTURES	Copy the specified number of images.
SECONDS	Copy images corresponding to the specified duration.
MINUTES	Copy images corresponding to the specified duration.

NOTE

- The maximum possible setting for images, seconds, and minutes is 60.
- Copying of alarm recordings can only be carried out one alarm at a time.

8 Press the [>] button.

The cursor moves to "START".

```
COPY TO  :  ARCHIVE AREA

HOW MANY :  10 MINUTES

      START    ->

FORMAT COMPACT FLASH ->

CHANGE : ↓↑,  SET : ENTER
```
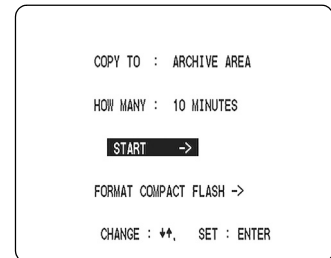
9 Press the [>] button.

Copying to the archive area starts.
When this has been completed, "COPY FINISHED!" is displayed.

■ **To cancel a copy operation**
  Press the [COPY] button to cancel the current copy.

Copying an archive area image to a CompactFlash card or Microdrive

Copying to a Microdrive and to a CompactFlash card are carried out in the same way.

[COPY] button
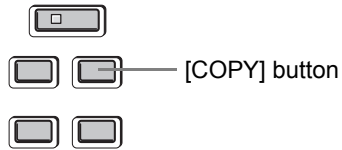
1 Insert the CompactFlash card.

Insertion method
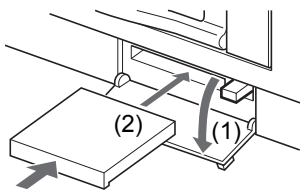
(1) Open the cover.
(2) Insert the CompactFlash card into the CompactFlash card slot, in the correct direction.
The release lever pops out slightly.

Removal method
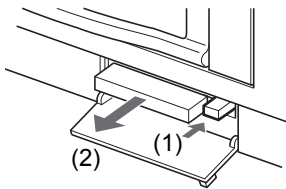
(1) Push the release lever.
(2) Remove the CompactFlash card.

2 With an still image from the archive area, press the [COPY] button.

The copy screen is displayed. The cursor moves to "COPY TO".

```
COPY TO  :  COMPACT FLASH

HOW MANY :   1 PICTURES

    START      ->

FORMAT COMPACT FLASH ->

  CHANGE : ↓↑,   SET : ENTER
```
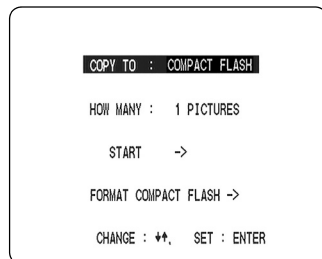
3 Press the [∨] or [∧] button to select "HOW MANY".

4 Press the [>] button, then the [∨] or [∧] button to set the copy number.

Any value between 1 and 60 can be set.

```
COPY TO  :  COMPACT FLASH

HOW MANY     1 PICTURES

    START    ->

FORMAT COMPACT FLASH ->

  CHANGE : ↓↑,   SET : ENTER
```
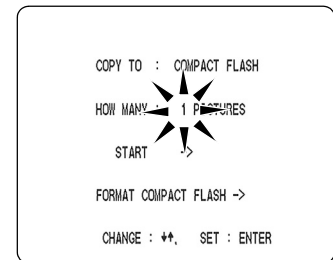
5 Press the [>] button.

6 Press the [∨] or [∧] button to select "PICTURES".
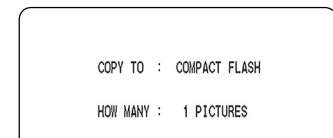
```
COPY TO  :  COMPACT FLASH

HOW MANY :   1 PICTURES
```

[Settings] (◆ indicates default setting.)

Setting	Description
◆PICTURES	Copy the specified number of images.
SECONDS	Copy images corresponding to the specified duration.
MINUTES	Copy images corresponding to the specified duration.

NOTE ▶

- Up to 40,000 images can be copied. Copying will stop when this number has been reached.
- Copying of alarm recordings can only be carried out one alarm at a time.

7 Press the [>] button.

8   Move the cursor to "START" and press the [>] button.

```
COPY TO  :  COMPACT FLASH

HOW MANY :   1 PICTURES

    START    →
```
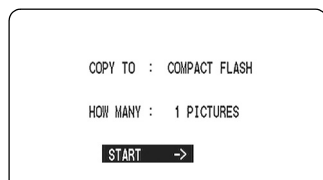
(1)   Copying to the CompactFlash card starts. The message "COPY TO COMPACT FLASH!" is displayed on-screen.
(2)   When this has been completed, "COPY FINISHED!" is displayed.

■ **To cancel a copy operation**

Press the [COPY] button to cancel the current copy.

NOTE ▶

● When images are copied directly from the normal recording area or the alarm recording area to a CompactFlash card, the same image will be copied to the archive area temporarily. An error message will be displayed when the archive area becomes full.
● Before images recorded on a Sanyo multiplexer can be copied to a CompactFlash card, the channel to be copied must be selected. (See "Playback with a channel specified for the camera image" on P. 28)
● If audio has been recorded, this will be copied together with the images.

Recording area in CompactFlash cards

When copied to the CompactFlash card, folders shown below are created and the images are stored within them.

CompactFlash card

```
└ SANYO ─ 02032101 ┬ IMG00001 ─── ┬ 00000001.JPG
   (1)        (2)   │    (3)      ├ 00000002.JPG
                    ├ IMG00002    └ 00000003.JPG
                    │    (3)
                    ├ IMG00003
                    │    (3)
                    └ INDEX.HTM
                         (4)
```
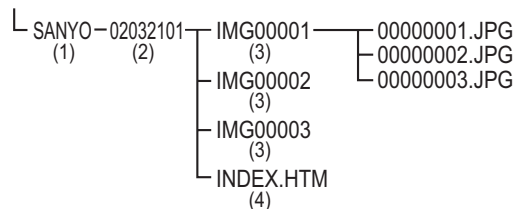
(1)   A folder is created with the name SANYO inside the root directory.
(2)   Within this, folders are created based on the date of copied images.
(3)   Within each date folder, sub-directories are created in sequence starting with IMG00001. Each sub-directory can hold up to 200 individual images.
(4)   To view images on your PC, open the file INDEX.HTM found in each date folder using a browser (i.e., Internet Explorer 5.0 or later). You will then be able to view the JPEG images individually or in slide show format, etc.

⚠ **CAUTION**

● **JPEG images**
JPEG files contain field images, and for this reason, they will be 50% compressed in the horizontal direction when viewed using a standard image viewer. These files should, therefore, be opened using the INDEX.HTM file. Alternatively, the playback application DVR Viewer can be used to view these images. This application is needed when playing back images and audio, and it can be installed from the CD-ROM supplied with this digital video recorder.
● **Copying frame-recorded images to a CompactFlash card**
Since frame-recorded images are copied as two individual field images, frame playback will not be possible on your PC.
● **Images copied to a CompactFlash card**
Since images copied to a CompactFlash card contain embedded coding for the detection of manipulation, these codes can be detected using a suitable software. Contact your local service location for more details.

8 SAVING MENU SETTINGS

Use the following procedure to save menu settings on a CompactFlash card or to load settings from a CompactFlash card back into the unit. These functions make it easy to use the same settings on a number of different digital video recorders.

1 Call up <MAIN MENU 1> and then press and hold the [STILL] button for at least 3 seconds.

The <COPY MENU SETTINGS> screen is displayed.

```
              <COPY MENU SETTINGS>

              DVR TYPE VER. SA01-02

(1) ————————  SAVE MENUS TO CF        ->

(2) ————————  LOAD MENUS FROM CF      ->
              COPY RECORDING AREA SETTINGS: NO

             * IF YOU COPY RECORDING AREA SETTINGS,
                HARD DISK WILL BE INITIALIZED!
```
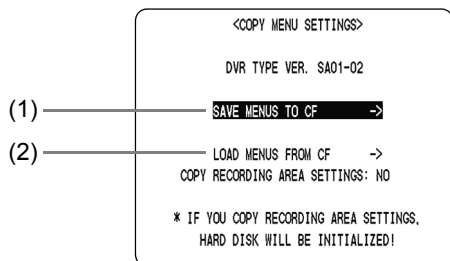
(1) SAVE MENUS TO CF
   This saves the menu settings to a CompactFlash card.
(2) LOAD MENUS FROM CF
   This loads menu settings into the unit from a CompactFlash card.

2 To leave the <COPY MENU SETTINGS> screen, press the [<] button.

Saving on a CompactFlash card

1 Press the [∨] or [∧] button to select "SAVE MENUS TO CF", then press the [>] button.

The <WARNING> screen is displayed.

```
              <COPY MENU SETTINGS>

              DVR TYPE VER. SA01-02

              SAVE MENUS TO CF        ->

              LOAD MENUS FROM CF      ->
              COPY RECORDING AREA SETTINGS: NO

             * IF YOU COPY RECORDING AREA SETTINGS,
                HARD DISK WILL BE INITIALIZED!
```

```
                    <WARNING>

                 SAVE MENUS TO CF!!


                    CONTINUE?
                      YES
```
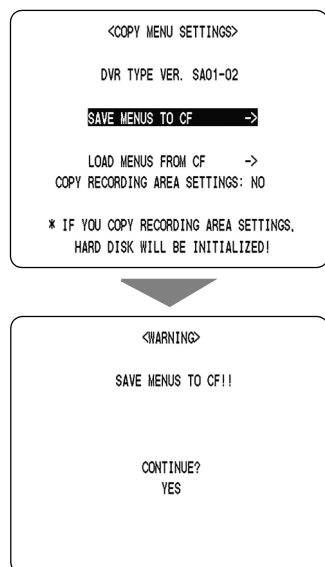
2 Press the [∨] or [∧] button to select "YES", then press the [>] button.

(1) The saving process begins.
(2) When this process has been completed, "SAVING FINISHED!!" is displayed. A file named "MENUCOPY.TXT" is created in the CompactFlash card directory.

```
              <COPY MENU SETTINGS>

                 SAVING FINISHED!!

              SAVE MENUS TO CF        ->

              LOAD MENUS FROM CF      ->
              COPY RECORDING AREA SETTINGS: NO

             * IF YOU COPY RECORDING AREA SETTINGS,
                HARD DISK WILL BE INITIALIZED!
```
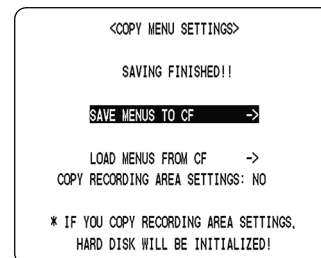
Loading settings from a CompactFlash card

Use the following procedure to load menu settings saved on a CompactFlash card back into the unit.

! CAUTION

● When loading a menu setting file into the unit, you will be able to specify whether recording area settings are to be copied.
   Normally, "COPY RECORDING AREA SETTINGS" should be set to "NO". If set to "YES", hard disk initialization will be carried out as part of the loading process, and all recorded data will be lost.

1 Press the [∨] or [∧] button to select "LOAD MENUS FROM CF", then press the [>] button.

The <WARNING> screen is displayed.

```
              <COPY MENU SETTINGS>

              DVR TYPE VER. SA01-02

              SAVE MENUS TO CF        ->


              LOAD MENUS FROM CF      ->
              COPY RECORDING AREA SETTINGS: NO

             * IF YOU COPY RECORDING AREA SETTINGS,
                HARD DISK WILL BE INITIALIZED!
```

```
                    <WARNING>

                 LOAD MENUS FROM CF!!


                    CONTINUE?
                      YES
```

2 Press the [∨] or [∧] button to select "YES", then press the [>] button.

(1) The loading process begins.
(2) When this process has been completed, "LOADING FINISHED!!" is displayed and the digital video recorder is restarted.
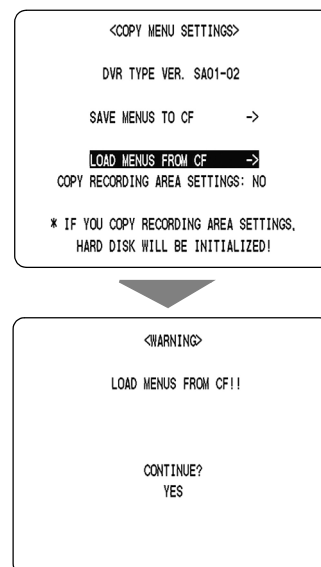
```
        <COPY MENU SETTINGS>

          LOADING FINISHED!!

     SAVE MENUS TO CF        ->

     LOAD MENUS FROM CF      ->
     COPY RECORDING AREA SETTINGS: NO

   * IF YOU COPY RECORDING AREA SETTINGS,
     HARD DISK WILL BE INITIALIZED!
```

When copying recording area settings

Use the following procedure to copy recording area settings.

1 Press the [∨] or [∧] button to select "COPY RECORDING AREA SETTINGS", then press the [>] button.

```
        <COPY MENU SETTINGS>

        DVR TYPE VER. SA01-02

     SAVE MENUS TO CF        ->

     LOAD MENUS FROM CF      ->
     COPY RECORDING AREA SETTINGS: NO

   * IF YOU COPY RECORDING AREA SETTINGS,
     HARD DISK WILL BE INITIALIZED!
```
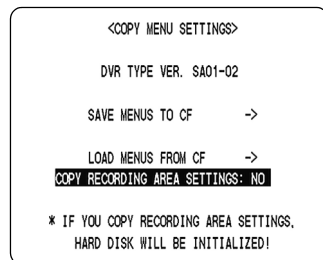
2 Press the [∨] or [∧] button to select "YES", then press the [>] button.

The cursor is positioned on "SAVE MENUS TO CF".

⚠ CAUTION

● When loading menu settings, "COPY RECORDING AREA SETTINGS" should normally be set to "NO". If set to "YES", hard disk initialization will be carried out as part of the loading process, and all recorded data will be lost.

3 Press the [∨] or [∧] button to select "LOAD MENUS FROM CF", then press the [>] button.

The <WARNING> screen is displayed.

```
        <COPY MENU SETTINGS>

        DVR TYPE VER. SA01-02

     SAVE MENUS TO CF        ->

     LOAD MENUS FROM CF      ->
     COPY RECORDING AREA SETTINGS: YES

   * IF YOU COPY RECORDING AREA SETTINGS,
     HARD DISK WILL BE INITIALIZED!
```

```
            <WARNING>

        LOAD MENUS FROM CF!!
      HARD DISK WILL BE INITIALIZED !


              CONTINUE?
                YES
```

4 Press the [∨] or [∧] button to select "YES", then press the [>] button.

(1) The loading process begins.
(2) When this process has been completed, "LOADING FINISHED!!" is displayed and the digital video recorder is restarted.
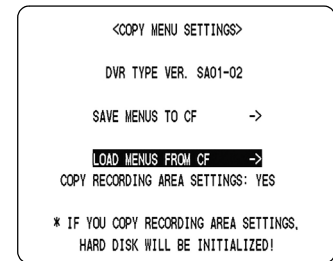
```
        <COPY MENU SETTINGS>

          LOADING FINISHED!!

     SAVE MENUS TO CF        ->

     LOAD MENUS FROM CF      ->
     COPY RECORDING AREA SETTINGS: NO

   * IF YOU COPY RECORDING AREA SETTINGS,
     HARD DISK WILL BE INITIALIZED!
```
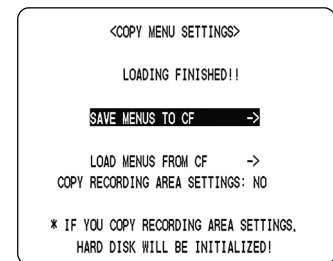
MENU CONFIGURATION AND OPERATIONS

This section describes the menu configuration, and which menu item to select for each operation.

Displaying menu screens and setting screens

Press the [MENU] button to display the menu screen. This unit uses two different types of menu screen.
<MAIN MENU 1> lets you make settings for recording.
<MAIN MENU 2> lets you make settings for useful operating functions and for the system itself.

[MENU] button   [<] button   [∧] button   [>] button

[∨] button   [EXIT/OSD] button
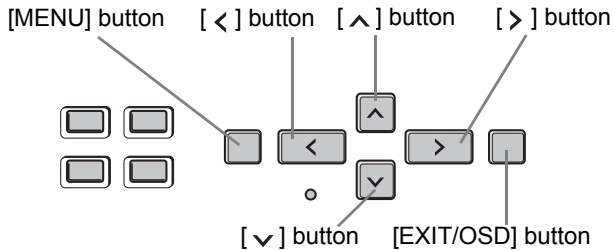
1   Press the [MENU] button.

The <MAIN MENU 1> screen appears. Press this [MENU] button once again to call up the <MAIN MENU 2> screen.

```
            <MAIN MENU 1>
1.LANGUAGE/CLOCK SET         ->
2.VIDEO INPUT SET            ->
3.RECORDING AREA SET         ->
4.RECORDING CONDITIONS SET   ->
5.NORMAL REC MODE SET        ->
6.TIMER SET                  ->
7.HOLIDAY SET                ->
8.ALARM REC MODE SET         ->
TO MAIN MENU 2               ->
        SELECT : ↓↑,   SET : ENTER
```

```
            <MAIN MENU 2>
1.DISPLAY/VIDEO LOSS SET     ->
2.RS-232C/RS-485 SET         ->
3.BUZZER SET                 ->
4.SECURITY LOCK SET          ->
5.NETWORK SET                ->
6.HDD SET                    ->
7.POWER FAILURE/USED TIME    ->

TO MAIN MENU 1               ->
        SELECT : ↓↑,   SET : ENTER
```
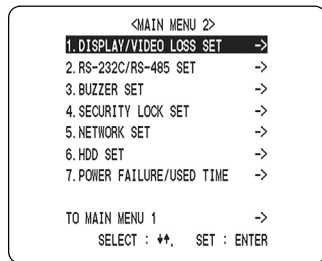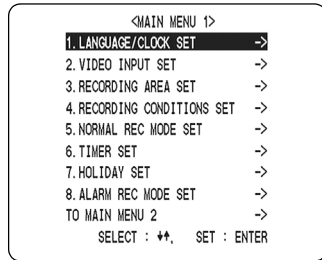
Press the [∨] or [∧] button to switch between the main menus.
"TO MAIN MENU 2" or "TO MAIN MENU 1" can be selected from the bottom of each main menu screen, and the display will switch to the corresponding screen when the [>] button is then pressed.

Moving to a sub-menu from MAIN MENU 1 or MAIN MENU 2

2   Press the [∨] or [∧] button to select a menu.

(Example: "3. RECORDING AREA SET")
When you move the cursor, the selected item is displayed in reverse.

```
            <MAIN MENU 1>
1.LANGUAGE/CLOCK SET         ->
2.VIDEO INPUT SET            ->
3.RECORDING AREA SET         ->
4.RECORDING CONDITIONS SET   ->
5.NORMAL REC MODE SET        ->
6.TIMER SET                  ->
7.HOLIDAY SET                ->
8.ALARM REC MODE SET         ->
TO MAIN MENU 2               ->
        SELECT : ↓↑,   SET : ENTER
```
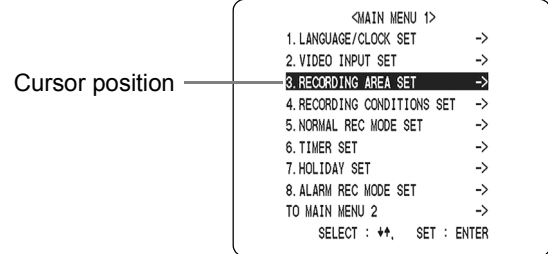
Cursor position

3   Press the [>] button.

The selected sub-menu appears.
The cursor is positioned on the first setting item.

```
          <RECORDING AREA SET>
TOTAL CAPACITY            :   81GB
NORMAL RECORDING AREA     :   60 %
    AREA FULL RESET   ->
ALARM RECORDING AREA      :   39 %
    AREA FULL RESET   ->
ARCHIVE AREA              :    1 %
    AREA FULL RESET   ->

CAUTION : WHEN THE AREA SETTING IS CHANGED,
          THE WHOLE AREA WILL BE INITIALIZED !
```
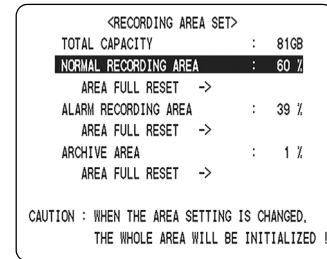
Returning to the normal screen.

4   Press the [EXIT/OSD] button.

The display returns to the normal screen.

NOTE ▶

● You can display a menu screen during recording, but not during playback.
● Press the [<] button to return to the main menu screen from a sub-menu screen.

⚠ CAUTION

● You cannot change menu settings while recording.

Entering settings in sub-menu screens

Use the [∧], [∨], [<] and [>] buttons to change settings in setting screens.
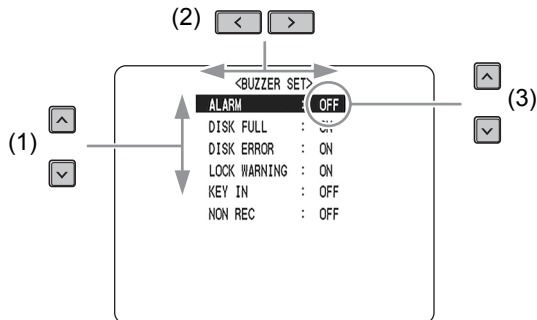
(1) To move the cursor up/down
Press the [∨] or [∧] button.

(2) To move the cursor right or left to a setting item
Press the [<] or [>] button.

(3) To change a setting value
Press the [∧] or [∨] button.

To restore menu setting items to their default values

Follow the procedures below to restore the settings in the displayed setting screen to their default values.

1 Display the setting screen whose settings are to be restored.

2 Press the [MENU RESET] button.

The displayed settings are restored to their default values.
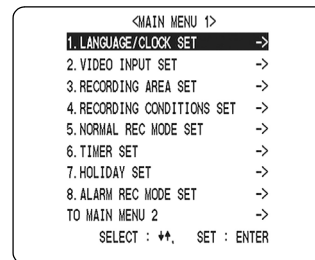
[MENU RESET] button

Overview of <MAIN MENU 1> sub-menus

The screens below are the sub-menus displayed by selecting items from the <MAIN MENU 1>.
Each time you press the [MENU] button, the sub-menus shown below will be displayed in the indicated order.

(1) LANGUAGE/CLOCK SET (→P. 49)
Enables the following settings:
● Screen display language
● Digital video recorder's date and time settings
● Daylight savings time settings
● Time synchronization with external devices

(2) VIDEO INPUT SET (→P. 52)
Used to make settings when a multiplexer is connected.

(3) RECORDING AREA SET (→P. 53)
Used to set allocations for the "NORMAL RECORDING AREA", "ALARM RECORDING AREA", and "ARCHIVE AREA".
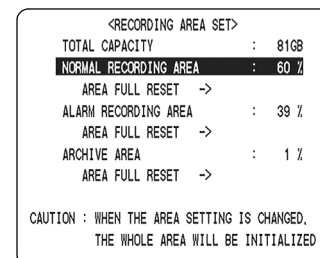
(4) RECORDING CONDITIONS SET (→P. 56)

Used to make settings
when multiple units are
connected together. In
addition, this sub-menu
also allows you to
indicate whether
recording is to be stopped
or continued in overwrite
mode when the available
space for recorded data has been filled during recording.

```
       <RECORDING CONDITIONS SET>
  SERIES RECORDING        :  OFF


  AUTO DELETE            :  OFF


  NORMAL RECORDING AREA
   OVERWRITE            :  ON
  ALARM RECORDING AREA
   OVERWRITE            :  ON
  REMAINING DISK WARNING  :  **
```
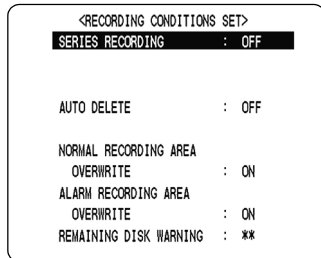
(5) NORMAL REC MODE SET (→P. 59)

Used to make settings for
picture quality, recording
method, audio recording,
and recording rate when
images are being
recorded to the normal
recording area.

```
       <NORMAL REC MODE SET>
  PICTURE QUALITY       :  ENHANCED
  FRAME/FIELD RECORDING :  FIELD
  AUDIO RECORDING       :  OFF
  REC RATE  :    10 FPS (   0H)
```
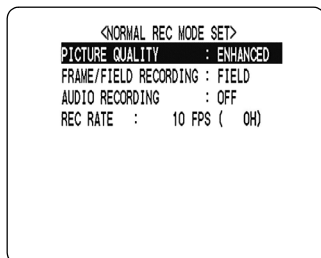
(6) TIMER SET (→P. 60)

Used for timer recording
settings.

```
                <TIMER SET>
  WEEK  START  STOP   REC RATE         SET
  SUN   --:--  --:--     10FPS (   0H)  OFF
  MON   --:--  --:--     10FPS (   0H)  OFF
  TUE   --:--  --:--     10FPS (   0H)  OFF
  WED   --:--  --:--     10FPS (   0H)  OFF
  THU   --:--  --:--     10FPS (   0H)  OFF
  FRI   --:--  --:--     10FPS (   0H)  OFF
  SAT   --:--  --:--     10FPS (   0H)  OFF
  DLY   --:--  --:--     10FPS (   0H)  OFF
```
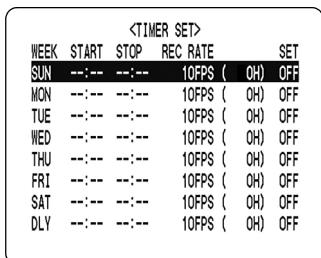
(7) HOLIDAY SET (→P. 63)

By specifying a month
and date, you can have
timer recording
performed on that day,
with the same settings
used for Sunday.

```
              <HOLIDAY SET>
   1.  03-29      11. -----
   2.  04-15      12. -----
   3.  -----      13. -----
   4.  -----      14. -----
   5.  -----      15. -----
   6.  -----      16. -----
   7.  -----      17. -----
   8.  -----      18. -----
   9.  -----      19. -----
  10.  -----      20. -----
```
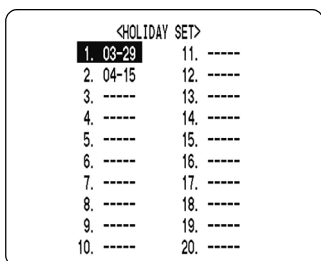
(8) ALARM REC MODE SET (→P. 64)

Used to make settings for
picture quality, recording
method, audio recording,
and recording rate when
images are being
recorded to the alarm
recording area.
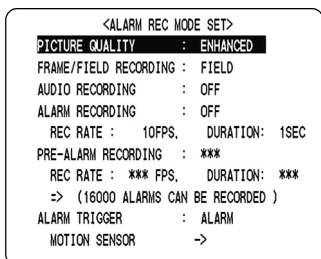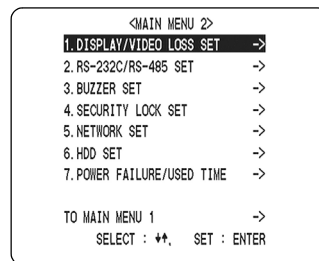
```
          <ALARM REC MODE SET>
  PICTURE QUALITY       :  ENHANCED
  FRAME/FIELD RECORDING :  FIELD
  AUDIO RECORDING       :  OFF
  ALARM RECORDING       :  OFF
   REC RATE :   10FPS,   DURATION: 1SEC
  PRE-ALARM RECORDING   :  ***
   REC RATE :  *** FPS,  DURATION: ***
   =>  (16000 ALARMS CAN BE RECORDED )
  ALARM TRIGGER         :  ALARM
   MOTION SENSOR         ->
```

Overview of <MAIN MENU 2> sub-menus

```
            <MAIN MENU 2>
  1.DISPLAY/VIDEO LOSS SET    ->
  2.RS-232C/RS-485 SET        ->
  3.BUZZER SET                ->
  4.SECURITY LOCK SET         ->
  5.NETWORK SET               ->
  6.HDD SET                   ->
  7.POWER FAILURE/USED TIME   ->

  TO MAIN MENU 1              ->
      SELECT : ++,   SET : ENTER
```

The screens below are the sub-menus displayed by
selecting items from the <MAIN MENU 2>.
Each time you press the [MENU] button, the sub-menus
shown below will be displayed in the indicated order.

(1) DISPLAY/VIDEO LOSS SET (→P. 68)

Lets you display or hide
items of information in
the operation display
area.
You can have the screen
display "VIDEO LOSS"
whenever the camera or
other image is
interrupted.

```
            <DISPLAY SET>
  DATE         :  ON
  TIME         :  ON
  QUALITY      :  ON
  REC RATE     :  ON
  ALARM COUNT  :  ON
  ALARM TYPE   :  ON

         <VIDEO LOSS SET>
  VIDEO LOSS   :  ON
```
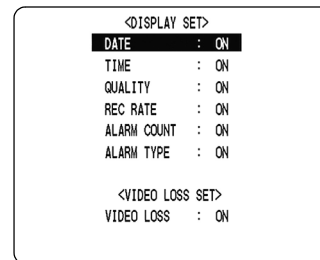
(2) RS-232C/RS-485 SET (→P. 69)

Lets you make settings
when connecting to a PC
using an RS-232C cable
or to external devices
using an RS-485 cable.
Requires option board
(sold separately).

```
         <RS-232C/RS-485 SET>
  CONTROL      :  RS-232C
  DATA SPEED   :  19200
  STATUS INFO  :  ***
  ALARM INFO   :  ***
  ADDRESS      :  ***
```
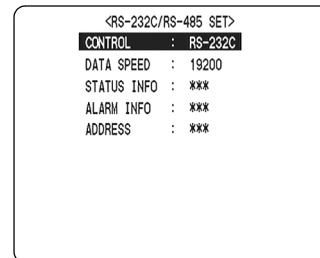
(3) BUZZER SET (→P. 71)

Lets you enable or
disable alarms for
various events.

```
            <BUZZER SET>
  ALARM        :  OFF
  DISK FULL    :  ON
  DISK ERROR   :  ON
  LOCK WARNING :  ON
  KEY IN       :  OFF
  NON REC      :  OFF
```

SETTINGS

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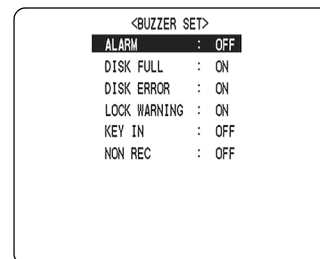
(4) SECURITY LOCK SET (→P. 72)

Lets you set passwords to prevent unauthorized users from operating the digital video recorder.

```
            <SECURITY LOCK SET>
     LEVEL   PASSWORD(4-8)   USE
     ADMIN      ---------    OFF
     USER       ---------    OFF
     REC CONTROL      :   ADMIN
```

(5) NETWORK SET (→P. 76)

Lets you make settings when connecting with PCs via a local-area network (LAN). Requires option board (sold separately).

```
              <NETWORK SET>

     NETWORK CONTROL :  ON(DISPLAY:ON )
     IP ADDRESS    :  192.168.  0.  1
     SUBNET MASK   :  255.255.255.  0
     GATEWAY       :    0.  0.  0.  0
     PORT          :  00080
        ID         :  PASSWORD (4-8)
        ID1        :  1111----
        ID2        :  2222----
        ID3        :  3333----
```

(6) HDD SET (→P. 79)

Lets you initialize the hard disk.

```
              <HDD SET>
     DISK1          :  81GB


        DISK INITIALIZE    ->
     CAUTION : ALL RECORDING WILL BE ERASED!
```

(7) POWER FAILURE/USED TIME (→P. 80)

Lets you check the date/ time of power failures and the amount of hard disk operation time.

```
          <POWER FAILURE/USED TIME>
     POWER FAILURE
              FAILURE  -----  --:--
              RECOVER  -----  --:--

     USED TIME
              DISK1 USE :   00092H

              POWER     :   00098H

     FIRMWARE :  MAIN  1.13-53  /  SUB  1.04-02
```

Table of recording rate and times

This unit's recording time can be changed by modifying the recording rate and the recording picture quality.
The following table provides reference values for picture quality and recording rate in a situation where images are field recorded and frame recorded to the normal recording area on this unit's removable HDD.
● The time setting for the normal recording area and the alarm recording area is determined by multiplying the recording picture quality value from the recording rate table by the percent display value for the normal recording area and the alarm recording area as specified using the menu's recording area settings.

■ When recording with an 80-GB hard disk at 100% capacity

Field recording

Recording rate (fields per second)	Recording time				
	BASIC	NORMAL	ENHANCED	FINE	SUPER FINE
	15kB	22kB	30kB	42kB	50kB
60.00	21H	15H	11H	8H	6H
30.00	42H	30H	22H	16H	12H
20.00	63H	45H	33H	24H	18H
15.00	85H	60H	45H	32H	24H
10.00	127H	90H	67H	49H	37H
7.50	170H	120H	90H	65H	49H
6.00	212H	150H	113H	82H	62H
5.00	255H	180H	135H	98H	74H
4.29	297H	210H	158H	115H	87H
3.75	340H	241H	180H	131H	99H
3.33	382H	271H	203H	147H	112H
3.00	425H	301H	226H	164H	124H
2.73	468H	331H	248H	180H	137H
2.31	553H	391H	293H	213H	162H
2.00	638H	452H	339H	246H	187H
1.67	765H	542H	406H	295H	224H
1.43	893H	632H	474H	345H	261H
1.25	1021H	723H	542H	394H	299H
1.11	1148H	813H	610H	443H	336H
1.00	1276H	904H	678H	493H	374H
0.50	2553H	1808H	1356H	986H	748H
0.33	3829H	2712H	2034H	1479H	1122H
0.25	5106H	3616H	2712H	1972H	1496H
0.20	6382H	4521H	3390H	2466H	1870H
0.10	12765H	9042H	6781H	4932H	3741H
0.05	25531H	18084H	13563H	9864H	7483H
0.03	38296H	27126H	20345H	14796H	11224H

Frame recording

Recording rate (frames per second)	Recording time				
	BASIC	NORMAL	ENHANCED	FINE	SUPER FINE
	15kB	22kB	30kB	42kB	50kB
30.00	21H	15H	11H	8H	6H
15.00	42H	30H	22H	16H	12H
10.00	63H	45H	33H	24H	18H
7.50	85H	60H	45H	32H	24H
5.00	127H	90H	67H	49H	37H
3.75	170H	120H	90H	65H	49H
3.00	212H	150H	113H	82H	62H
2.50	255H	180H	135H	98H	74H
2.14	297H	210H	158H	115H	87H
1.88	340H	241H	180H	131H	99H
1.67	382H	271H	203H	147H	112H
1.50	425H	301H	226H	164H	124H
1.36	468H	331H	248H	180H	137H
1.15	553H	391H	293H	213H	162H
1.00	638H	452H	339H	246H	187H
0.83	765H	542H	406H	295H	224H
0.71	893H	632H	474H	345H	261H
0.63	1021H	723H	542H	394H	299H
0.56	1148H	813H	610H	443H	336H
0.50	1276H	904H	678H	493H	374H
0.25	2553H	1808H	1356H	986H	748H
0.17	3829H	2712H	2034H	1479H	1122H
0.13	5106H	3616H	2712H	1972H	1496H
0.10	6382H	4521H	3390H	2466H	1870H
0.05	12765H	9042H	6781H	4932H	3741H
0.03	25531H	18084H	13563H	9864H	7483H
0.02	38296H	27126H	20345H	14796H	11224H

Reference: 24H (1 day), 168H (1 week), 720H (1 month), 8760H (1 year)

⬚ : Area in which sound recording is possible (when recording sound, recording time is shorter than time shown above)

SETTINGS

■ **When recording with a 160-GB hard disk at 100% capacity**

Field recording

Recording rate (fields per second)	Recording time				
	BASIC	NORMAL	ENHANCED	FINE	SUPER FINE
	15kB	22kB	30kB	42kB	50kB
60.00	42H	30H	22H	16H	12H
30.00	85H	60H	45H	32H	24H
20.00	127H	90H	67H	49H	37H
15.00	170H	120H	90H	65H	49H
10.00	255H	180H	135H	98H	74H
7.50	340H	241H	180H	131H	99H
6.00	425H	301H	226H	164H	124H
5.00	510H	361H	271H	197H	149H
4.29	595H	421H	316H	230H	174H
3.75	680H	482H	361H	263H	199H
3.33	765H	542H	406H	295H	224H
3.00	851H	602H	452H	328H	249H
2.73	936H	663H	497H	361H	274H
2.31	1106H	783H	587H	427H	324H
2.00	1276H	904H	678H	493H	374H
1.67	1531H	1085H	813H	591H	448H
1.43	1787H	1265H	949H	690H	523H
1.25	2042H	1446H	1085H	789H	598H
1.11	2297H	1627H	1220H	887H	673H
1.00	2553H	1808H	1356H	986H	748H
0.50	5106H	3616H	2712H	1972H	1496H
0.33	7659H	5425H	4069H	2959H	2244H
0.25	10212H	7233H	5425H	3945H	2993H
0.20	12765H	9042H	6781H	4932H	3741H
0.10	25531H	18084H	13563H	9864H	7483H
0.05	51062H	36168H	27126H	19728H	14966H
0.03	76593H	54253H	40690H	29592H	22449H

Frame recording

Recording rate (frames per second)	Recording time				
	BASIC	NORMAL	ENHANCED	FINE	SUPER FINE
	15kB	22kB	30kB	42kB	50kB
30.00	42H	30H	22H	16H	12H
15.00	85H	60H	45H	32H	24H
10.00	127H	90H	67H	49H	37H
7.50	170H	120H	90H	65H	49H
5.00	255H	180H	135H	98H	74H
3.75	340H	241H	180H	131H	99H
3.00	425H	301H	226H	164H	124H
2.50	510H	361H	271H	197H	149H
2.14	595H	421H	316H	230H	174H
1.88	680H	482H	361H	263H	199H
1.67	765H	542H	406H	295H	224H
1.50	851H	602H	452H	328H	249H
1.36	936H	663H	497H	361H	274H
1.15	1106H	783H	587H	427H	324H
1.00	1276H	904H	678H	493H	374H
0.83	1531H	1085H	813H	591H	448H
0.71	1787H	1265H	949H	690H	523H
0.63	2042H	1446H	1085H	789H	598H
0.56	2297H	1627H	1220H	887H	673H
0.50	2553H	1808H	1356H	986H	748H
0.25	5106H	3616H	2712H	1972H	1496H
0.17	7659H	5425H	4069H	2959H	2244H
0.13	10212H	7233H	5425H	3945H	2993H
0.10	12765H	9042H	6781H	4932H	3741H
0.05	25531H	18084H	13563H	9864H	7483H
0.03	51062H	36168H	27126H	19728H	14966H
0.02	76593H	54253H	40690H	29592H	22449H

Reference: 24H (1 day), 168H (1 week), 720H (1 month), 8760H (1 year)

☐ : Area in which sound recording is possible (when recording sound, recording time is shorter than time shown above)

Recording time

This table shows the recording times for pre-alarm recording. Refer to this table when setting pre-alarm recording. (→P. 66)

Recording rate (fields per second)	Recording time (s: seconds, m: minutes)										
	5s (5s)	10s (10s)	20s (20s)	40s (40s)	60s (1m)	120s (2m)	180s (3m)	240s (4m)	300s (5m)	600s (10m)	900s (15m)
20.00	○	○	○	○	○	○	○	○	○	○	○
15.00	○	○	○	○	○	○	○	○	○	○	○
10.00		○	○	○	○	○	○	○	○	○	○
7.50		○	○	○	○	○	○	○	○	○	○
6.00		○	○	○	○	○	○	○	○	○	○
5.00			○	○	○	○	○	○	○	○	○
4.29			○	○	○	○	○	○	○	○	○
3.75			○	○	○	○	○	○	○	○	○
3.33			○	○	○	○	○	○	○	○	○
3.00			○	○	○	○	○	○	○	○	○
2.73			○	○	○	○	○	○	○	○	○
2.31				○	○	○	○	○	○	○	○
2.00				○	○	○	○	○	○	○	○
1.67					○	○	○	○	○	○	○
1.43					○	○	○	○	○	○	○
1.25					○	○	○	○	○	○	○
1.11					○	○	○	○	○	○	○
1.00					○	○	○	○	○	○	○

[ ] : Default setting value, recording rate: 10.00 FPS, Recording time: 1 minute

The alarm duration menu setting can only be set to a recording time that is possible with the current recording rate setting. In addition, when setting the recording rate, it can only be set within the range allowed by the current alarm duration. For example, if the alarm duration is set to 5 seconds, the recording rate can only be set to 20.00 or 15.00 FPS.
If a slower recording rate is set, the setting will not be accepted until the alarm duration is changed.

SETTINGS

LANGUAGE/CLOCK SET

<MAIN MENU 1>

```
<MAIN MENU 1>
1. LANGUAGE/CLOCK SET      ->
2. VIDEO INPUT SET         ->
3. RECORDING AREA SET      ->
4. RECORDING CONDITIONS SET ->
5. NORMAL REC MODE SET     ->
6. TIMER SET               ->
7. HOLIDAY SET             ->
8. ALARM REC MODE SET      ->
TO MAIN MENU 2             ->
      SELECT : ++,   SET : ENTER
```
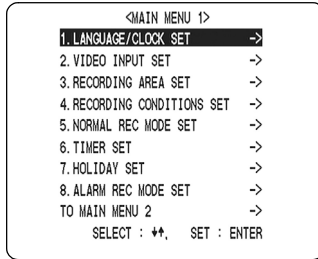
You can perform the following functions:
● Change the language used to display on-screen information.*
● Set the date and time displayed on the normal screen.*
● Set the clock to adjust automatically for daylight savings time.
● Set all the devices to the same time automatically when multiple devices are connected.
*: See P. 21 for the corresponding procedure.

<DAYLIGHT SAVING> settings

[MENU] button   [<] button   [∧] button   [>] button

[∨] button   [EXIT/OSD] button
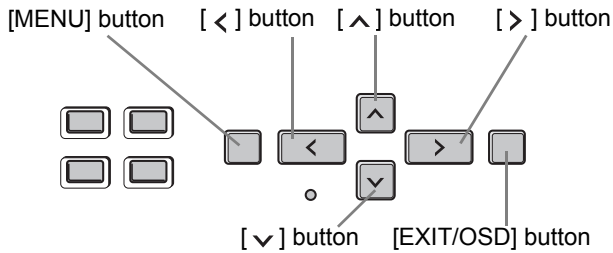
1 Press the [MENU] button.

The <MAIN MENU 1> screen is displayed.

2 Select "1. LANGUAGE/CLOCK SET" and press the [>] button.

The <LANGUAGE/LANGUE/IDIOMA> screen is displayed with the cursor positioned on "ENGLISH".

```
<LANGUAGE/LANGUE/IDIOMA>
       ENGLISH
     <CLOCK SET>
01-01-2004  THU  00:00:00
   <DAYLIGHT SAVING>
MODE    :     USE
      WEEK    MONTH    TIME
ON   1ST-SUN    04     02:00
OFF  LST-SUN    10     02:00
     <EXT.CLOCK SET>
ADJUST.TIME        01:00
```

3 Press the [∨] or [∧] button to select "MODE" under <DAYLIGHT SAVING>.

```
<LANGUAGE/LANGUE/IDIOMA>
       ENGLISH
     <CLOCK SET>
01-01-2004  THU  00:00:00
   <DAYLIGHT SAVING>
MODE    :     USE
      WEEK    MONTH    TIME
ON   1ST-SUN    04     02:00
OFF  LST-SUN    10     02:00
     <EXT.CLOCK SET>
ADJUST.TIME        01:00
```

4 Press the [>] button.

"USE" flashes.

```
<LANGUAGE/LANGUE/IDIOMA>
       ENGLISH
     <CLOCK SET>
01-01-2004  THU  00:00:01
   <DAYLIGHT SAVING>
MODE    :    USE
      WEEK   MONTH    TIME
ON   1ST-SUN    04     02:00
OFF  LST-SUN    10     02:00
     <EXT.CLOCK SET>
ADJUST.TIME        01:00
```
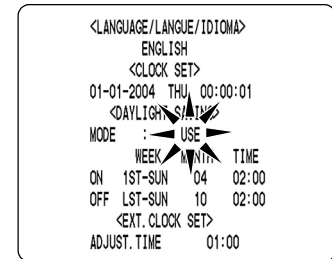
5 Press the [∨] or [∧] button to change the setting.

[Settings] (◆ indicates default setting.)

Setting	Description
◆USE	Time is automatically adjusted to daylight savings time.
NO USE	Time is not automatically adjusted to daylight savings time.

6 Press the [>] button.

The cursor moves to the date/time at which to switch from standard time to daylight savings time.

```
<LANGUAGE/LANGUE/IDIOMA>
       ENGLISH
     <CLOCK SET>
01-01-2004  THU  00:00:01
   <DAYLIGHT SAVING>
MODE    :    USE
      WEEK    MONTH    TIME
ON   1ST-SUN    04     02:00
OFF  LST-SUN    10     02:00
     <EXT.CLOCK SET>
ADJUST.TIME        01:00
```

49

When "USE" is selected for <DAYLIGHT SAVING>

You can set the date/time at which the time is switched from standard time to daylight savings time, and the date/time at which the time is switched back again.

The example below is the default value.
Example:
After the clock display reaches April 4, 2004, 01:59, the next clock display is 03:00, putting the clock an hour ahead (summer time).
After the clock display reaches October 31, 2004, 01:59, the next clock display is 01:00, putting the clock an hour behind (back to standard time).

```
        (1)       (2)       (3)         (4)
       WEEK     MONTH     TIME
ON    1ST-SUN    04      02:00
OFF   LST-SUN    10      02:00
        (5)       (6)       (7)         (8)
```

(1) Sets the week for switching to daylight savings time.
(2) Sets the day of the week.
(3) Sets the month.
(4) Sets the time.
(5) Sets the week for ending daylight savings time.
(6) Sets the day of the week.
(7) Sets the month.
(8) Sets the time.

7 Press the [>] button.

"1ST" flashes.

8 Press the [∨] or [∧] button to select the desired week, then press the [>] button.

The cursor moves to the day of the week.

9 Press the [∨] or [∧] button to select the desired day of the week, then press the [>] button.

The cursor moves to the month.

10 Press the [∨] or [∧] button to select the desired month, then press the [>] button.

The cursor moves to the time.

11 Press the [∨] or [∧] button to select the desired time, then press the [>] button.

The cursor moves to the minutes portion of the time. Set the desired minutes in the same manner.
Use the same procedure when setting the time at which daylight savings time is to end. The <DAYLIGHT SAVING> settings are now finished.

<EXT. CLOCK SET> settings

This section describes how to have the time synchronized automatically when two or more digital video recorders are connected. When "ADJUST. TIME" is set, all connected devices are adjusted every day to the time that has been set on the first device (to the nearest second).
(Default setting: 01:00)

1 Use a cable to connect the CLOCK OUT terminal on the rear panel of one digital video recorder to the CLOCK IN terminal on the second digital video recorder.

1st DVR
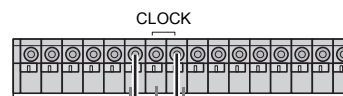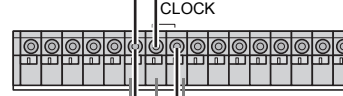
To 3rd DVR

⚠ **CAUTION**
● Do not use a loop connection.

2 Press the [∨] or [∧] button to move the cursor to "ADJUST. TIME".

3   Press the [>] button.

"01" flashes.

4   Press the [∨] or [∧] button to select the desired time, then press the [>] button.

```
        <LANGUAGE/LANGUE/IDIOMA>
              ENGLISH
            <CLOCK SET>
     01-01-2004  THU  00:01:09
          <DAYLIGHT SAVING>
     MODE    :    USE
             WEEK   MONTH   TIME
     ON  1ST-SUN    04     02:00
     OFF LST-SUN    10     02:00
          <EXT. CLOCK SET>
     ADJUST.TIME        05:00
```
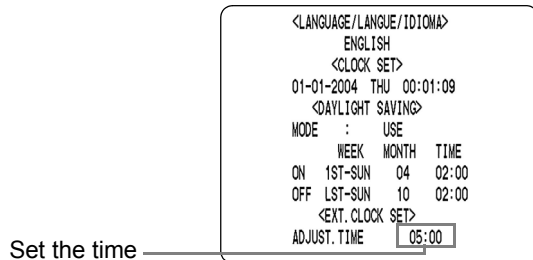
Set the time

5   Press the [EXIT/OSD] button.

The display returns to the normal screen.

6   Repeat procedures 2 to 5 to set the time on the second digital video recorder.

When you have finished making the settings, the display returns to the normal screen.

◖ NOTE ▶ ─────────────────────

● When the digital video recorder is connected to a PC or another external device through a network, you can also set the time from that device. See "Manual for Remote Operation by Network Connection" (→P. 90).

2 VIDEO INPUT SET

<MAIN MENU 1>

```
<MAIN MENU 1>
1. LANGUAGE/CLOCK SET      ->
2. VIDEO INPUT SET         ->
3. RECORDING AREA SET      ->
4. RECORDING CONDITIONS SET ->
5. NORMAL REC MODE SET     ->
6. TIMER SET               ->
7. HOLIDAY SET             ->
8. ALARM REC MODE SET      ->
TO MAIN MENU 2             ->
     SELECT : ++,   SET : ENTER
```

[MENU] button   [<] button   [ʌ] button   [>] button

[˅] button   [EXIT/OSD] button
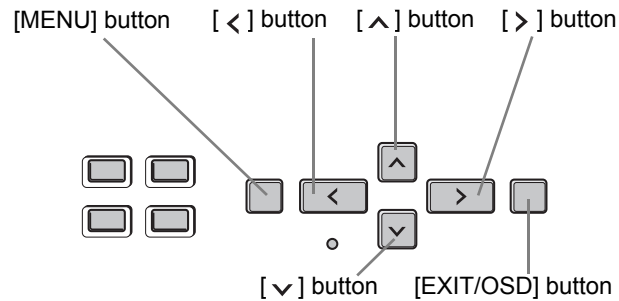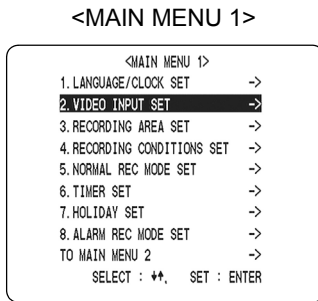
This section describes the settings to be made when using this unit in combination with a multiplexer (sold separately) and the settings for video input (analog).

Settings for multiplexer connection

1 Press the [MENU] button.

The <MAIN MENU 1> screen appears.

2 Select "2. VIDEO INPUT SET", and press the [>] button.

The <VIDEO INPUT SET> screen is displayed, with the cursor positioned on "MULTIPLEXER".

```
<VIDEO INPUT SET>
MULTIPLEXER    :  NO USE
```
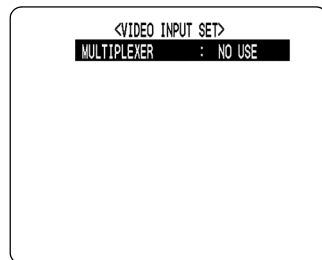
3 Press the [>] button.

"NO USE" flashes.

4 Press the [˅] or [ʌ] button to select the multiplexer to be used.

[Settings] (◆ indicates default setting.)

Setting	Description
◆NO USE	No multiplexer will be used.
SANYO	A Sanyo multiplexer will be used.
OTHERS1	A Sony multiplexer will be used.
OTHERS2	A Robot or DM multiplexer will be used.
OTHERS3	Other multiplexers

5 Press the [EXIT/OSD] button.

The display returns to the normal screen.

! CAUTION

● When this unit is to be used with a multiplexer, connect its switch output terminal to the multiplexer's switch input.

<MAIN MENU 1>

```
<MAIN MENU 1>
1. LANGUAGE/CLOCK SET      ->
2. VIDEO INPUT SET         ->
3. RECORDING AREA SET      ->
4. RECORDING CONDITIONS SET ->
5. NORMAL REC MODE SET     ->
6. TIMER SET               ->
7. HOLIDAY SET             ->
8. ALARM REC MODE SET      ->
TO MAIN MENU 2             ->
      SELECT : ↕,   SET : ENTER
```

[MENU] button   [⋀] button   [⟩] button

[⋁] button   [EXIT/OSD] button
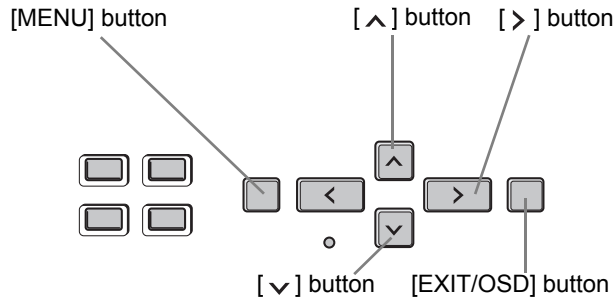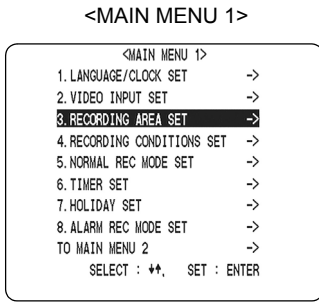
Displaying the recording area

Follow the procedures below to confirm all recording areas on the hard disk and the allocation for each recording area.

1   Press the [MENU] button.

The <MAIN MENU 1> screen appears.

2   Select "3. RECORDING AREA SET" and press the [⟩] button.

The <RECORDING AREA SET> screen is displayed.

```
<RECORDING AREA SET>
TOTAL CAPACITY          :  81GB        (1)
NORMAL RECORDING AREA   :  60 %        (2)
   AREA FULL RESET  ->
ALARM RECORDING AREA    :  39 %        (3)
   AREA FULL RESET  ->
ARCHIVE AREA            :   1 %        (4)
   AREA FULL RESET  ->

CAUTION : WHEN THE AREA SETTING IS CHANGED,
          THE WHOLE AREA WILL BE INITIALIZED !
```

	Description	
(1)	Displays the total capacity of the hard disk.	
(2)	Sets the capacity of the normal recording area.	Normal recording area
(3)	Sets the capacity of the alarm recording area.	Alarm recording area
(4)	Sets the capacity of the archive area.	Archive area

■ Default hard disk settings

By default, the normal recording area is set to 80%; the alarm recording area, to 19%; and the archive area, to 1%. The highest possible allocation for the archive area is 10GB.

Alarm recording area   Archive area

1%

19%

80%

Normal recording area

Hard disk's recording areas
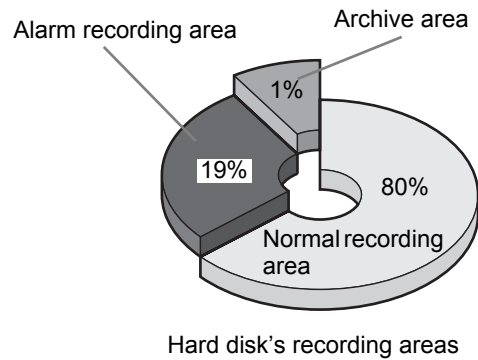
! CAUTION

● When the recording area settings are changed, the disk is initialized and all previous recordings are erased. It is important, therefore, to store recorded images on a PC or some other storage media before modifying recording areas.

Changing recording areas

■ **Recording area allocations**

The highest possible allocation for the normal recording area and the alarm recording area is 99%.
The allocation for the archive area cannot be set manually. This allocation will be automatically set to at least 1%.

■ **If the normal recording area is set to *1%**

When the normal recording area is set to "*1%", alarm recording is possible for the complete memory available in the alarm recording area. For "1%" and other settings, up to 16,000 items are recorded per hard disk. However, if set for *1%, "ALARM SEARCH", "ALARM THUMBNAIL SEARCH", and "MOTION DETECTION SEARCH" will not be available. Use "TIME/DATE SEARCH" instead.
Furthermore, since the alarm skip function will also be inactive, it will be necessary to carry out fast-forward and fast-rewind playback.

Example:
To set the normal recording area to 50% and the alarm recording area to 49%

1 **With "NORMAL RECORDING AREA" selected, press the [>] button.**

The capacity setting flashes.

```
           <RECORDING AREA SET>
TOTAL CAPACITY             :  81GB
NORMAL RECORDING AREA         80 %
   AREA FULL RESET   ->
ALARM RECORDING AREA       :  19 %
   AREA FULL RESET   ->
ARCHIVE AREA               :   1 %
   AREA FULL RESET   ->

CAUTION : WHEN THE AREA SETTING IS CHANGED,
          THE WHOLE AREA WILL BE INITIALIZED !
```
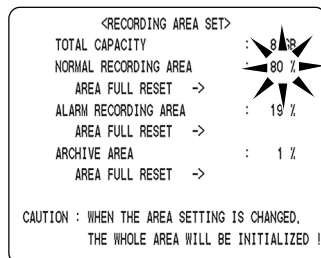
2 **Press the [∨] or [∧] button to set "NORMAL RECORDING AREA" to 50%, then press the [>] button, and press the [∨] button.**

The cursor moves to "ALARM RECORDING AREA".

```
           <RECORDING AREA SET>
TOTAL CAPACITY             :  81GB
NORMAL RECORDING AREA      :  50 %
   AREA FULL RESET   ->
ALARM RECORDING AREA       :  38 %
   AREA FULL RESET   ->
ARCHIVE AREA               :  12 %
   AREA FULL RESET   ->

CAUTION : WHEN THE AREA SETTING IS CHANGED,
          THE WHOLE AREA WILL BE INITIALIZED !
```
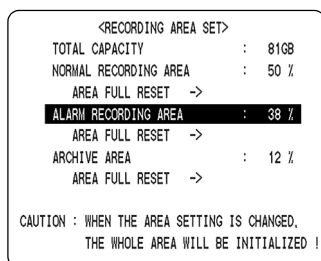
3 **Press the [>] button, causing the setting value for "ALARM RECORDING AREA" to flash.**

4 **Press the [∨] or [∧] button to set "ALARM RECORDING AREA" to 49%, then press the [>] button.**

The cursor moves to "AREA FULL RESET".

```
           <RECORDING AREA SET>
TOTAL CAPACITY             :  81GB
NORMAL RECORDING AREA      :  50 %
   AREA FULL RESET   ->
ALARM RECORDING AREA       :  49 %
   AREA FULL RESET   ->
ARCHIVE AREA               :   1 %
   AREA FULL RESET   ->
```
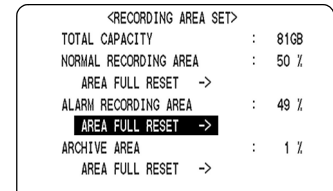
5 **Press the [EXIT/OSD] button.**

The <WARNING> screen is displayed to remind you that the entire hard disk is about to be initialized.

```
                <WARNING>


     THIS CHANGE WILL INITIALIZE THE DISK.
        ALL RECORDING WILL BE ERASED.
              ARE YOU SURE ?

                   NO


          CHANGE : ↔,  SET : ENTER
```

6 **To proceed with initialization, press the [∨] or [∧] button to select "YES".**

```
                <WARNING>


     THIS CHANGE WILL INITIALIZE THE DISK.
        ALL RECORDING WILL BE ERASED.
              ARE YOU SURE ?

                   YES


          CHANGE : ↔,  SET : ENTER
```

7 **Press the [>] button.**

A message appears indicating the disk is being initialized.
The hard disk is initialized and set to the modified capacity.

SETTINGS <MAIN MENU 1>

Setting overwrite permission

By default, when all of the space in the hard disk's normal recording area and alarm recording area has been used up, repetitive overwriting is automatically started (resulting in the older data being replaced).
However, it may be desirable to prevent overwriting in such a case when recorded images are to be checked or edited. To do this, follow the procedure described below to allow only a single overwrite for each recording area.

1 Using <RECORDING CONDITIONS SET> from the menu, set "OVERWRITE" for the "NORMAL RECORDING AREA" or "ALARM RECORDING AREA" to "OFF".

NOTE ▶

● When this setting has been made, it will ensure that the front panel's FULL or ALARM FULL space warning indicator will flash when the hard disk's remaining space is indicated in the operation display.

2 Select "3. RECORDING AREA SET" from <MAIN MENU 1> and press the [>] button.

The <RECORDING AREA SET> screen appears.

Setting overwriting for the normal recording area

3 Move the cursor to "AREA FULL RESET" under "NORMAL RECORDING AREA", then press the [>] button.

A <WARNING> screen appears with "NO" flashing.

```
              <RECORDING AREA SET>
        TOTAL CAPACITY          :   81GB
        NORMAL RECORDING AREA   :   60 %
AREA FULL   ────    AREA FULL RESET    ->
RESET
        ALARM RECORDING AREA    :   39 %
            AREA FULL RESET   ->
        ARCHIVE AREA            :    1 %
            AREA FULL RESET   ->

      CAUTION : WHEN THE AREA SETTING IS CHANGED,
                THE WHOLE AREA WILL BE INITIALIZED !
```

```
              <WARNING>

           AREA FULL RESET
         NORMAL RECORDING AREA

           ARE YOU SURE ?

Flashing   ────      NO

         CHANGE : ◆◆,   SET : ENTER
```
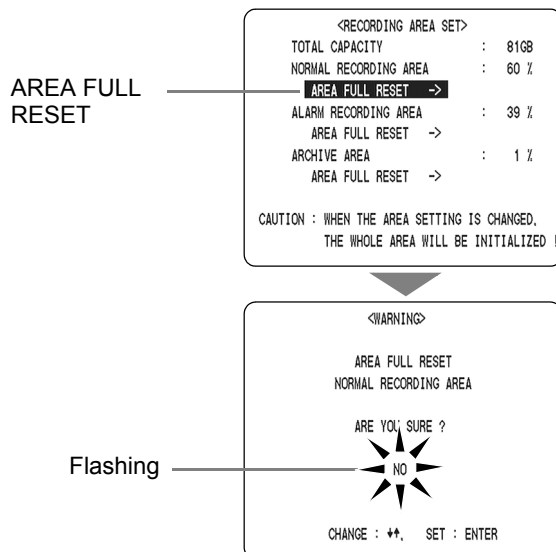
4 Press the [∨] or [∧] button to select "YES", then press the [>] button.

The "NORMAL RECORDING AREA" is setup for possible overwriting.

Setting overwriting for the alarm recording area

5 Move the cursor to "AREA FULL RESET" under "ALARM RECORDING AREA", then press the [>] button.

A <WARNING> screen appears with "NO" flashing.

```
              <WARNING>

           AREA FULL RESET
         ALARM RECORDING AREA

           ARE YOU SURE ?

                 NO

         CHANGE : ◆◆,   SET : ENTER
```

6 Press the [∨] or [∧] button to select "YES", then press the [>] button.

The "ALARM RECORDING AREA" is setup for possible overwriting.

To finish this process

7 Press the [EXIT/OSD] button.

The display returns to the normal screen.

NOTE ▶

● To allow automatic overwriting, set "OVERWRITE" for "NORMAL RECORDING AREA" or "ALARM RECORDING AREA" to "ON".

⚠ CAUTION

● Whenever "AREA FULL RESET" is carried out, the "NORMAL RECORDING AREA" and the "ALARM RECORDING AREA" are setup for possible overwriting. The "ARCHIVE AREA" is initialized and images are deleted.

4 RECORDING CONDITIONS SET

<MAIN MENU 1>

```
           <MAIN MENU 1>
1. LANGUAGE/CLOCK SET        ->
2. VIDEO INPUT SET           ->
3. RECORDING AREA SET        ->
4. RECORDING CONDITIONS SET  ->
5. NORMAL REC MODE SET       ->
6. TIMER SET                 ->
7. HOLIDAY SET               ->
8. ALARM REC MODE SET        ->
TO MAIN MENU 2               ->
        SELECT : ++,   SET : ENTER
```

[MENU] button   [∧] button   [>] button

[∨] button   [EXIT/OSD] button
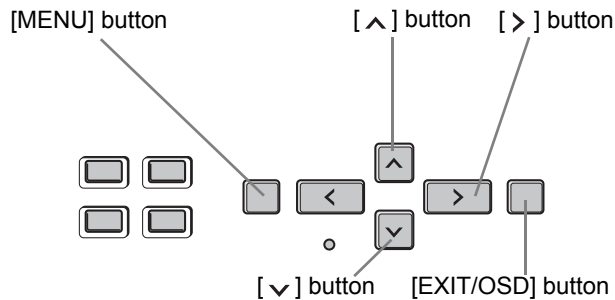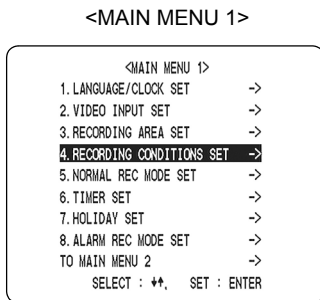
Setting series recording

This section describes how to perform series recording when a number of units have been connected together. When series recording is being carried out, the overwrite setting for the normal recording area and alarm recording area must be set to "OFF" as described on P. 57.

NOTE ▶

● When series recording is set, recording continues on a second digital video recorder when the remaining space in the first recorder's normal or alarm recording area runs out. Recording in areas with remaining space also stops. If the second digital video recorder is set to perform timer recording, recording continues according to that setting.

1 Connect the digital video recorders using the correct cables. (→P. 17)

● Cables of no longer than 3 m in length should be used.

2 Press the [MENU] button.

The <MAIN MENU 1> screen appears.

3 Select "4. RECORDING CONDITIONS SET" and press the [>] button.

The <RECORDING CONDITIONS SET> screen appears. The cursor moves to "SERIES RECORDING".

```
      <RECORDING CONDITIONS SET>
SERIES RECORDING       :  OFF


AUTO DELETE            :  OFF

NORMAL RECORDING AREA
  OVERWRITE            :  OFF
ALARM RECORDING AREA
  OVERWRITE            :  ON
REMAINING DISK WARNING :   1 %
```
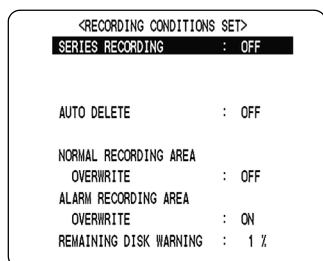
[Settings] (◆ indicates default setting.)

Setting	Description
◆OFF	No series recording.
ON	When multiple digital video recorders are connected, sets recording to continue automatically on the second and subsequent hard disks when the first hard disk becomes full.

4 Press the [>] button to select "OFF", then press the [∨] or [∧] button to select "ON", and press the [>] button.

The cursor moves to "OVERWRITE" for the normal recording area.

```
      <RECORDING CONDITIONS SET>
SERIES RECORDING       :  ON


AUTO DELETE            :  OFF

NORMAL RECORDING AREA
  OVERWRITE            :  OFF
ALARM RECORDING AREA
  OVERWRITE            :  ON
REMAINING DISK WARNING :   1 %
```
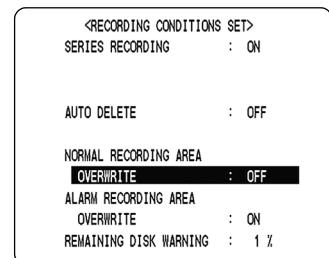
NOTE ▶

● The second DVR can perform recording even when TIMER STANDBY mode has been activated.

Setting normal recording area overwriting and remaining capacity on the operation display area

Settings can be made to indicate whether overwriting is to be performed (deleting old images) recording is to be stopped when any of the hard disk's recording areas become full. In the latter case, the remaining capacity is shown as a percentage on the operation display area.

1 Move the cursor to "OVERWRITE" under "NORMAL RECORDING AREA" and press the [>] button, then press the [∨] or [∧] button to select "OFF".

"**" from "REMAINING DISK WARNING" changes to "1%".
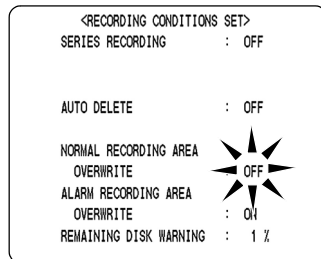
```
           <RECORDING CONDITIONS SET>
SERIES RECORDING        :  OFF

AUTO DELETE             :  OFF

NORMAL RECORDING AREA
  OVERWRITE             :  OFF
ALARM RECORDING AREA
  OVERWRITE             :  ON
REMAINING DISK WARNING  :  1 %
```

[Settings] (◆ indicates default setting.)

Setting	Description
OFF	Recording is stopped when the normal recording area becomes full.
◆ON	Overwriting automatically starts from the beginning of the normal recording area when it becomes full.

2 Press the [>] button.

The cursor moves to "OVERWRITE" for the alarm recording area.

```
           <RECORDING CONDITIONS SET>
SERIES RECORDING        :  OFF

AUTO DELETE             :  OFF

NORMAL RECORDING AREA
  OVERWRITE             :  OFF
ALARM RECORDING AREA
  OVERWRITE             :  ON
REMAINING DISK WARNING  :  1 %
```
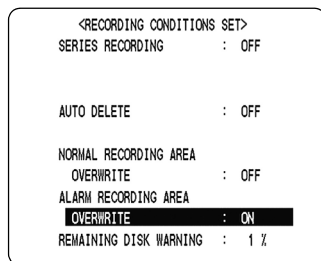
NOTE

● If this setting is turned "OFF", the space warning or ALARM FULL indicator will start to flash when the remaining hard-disk capacity reaches the percentage set for "REMAINING DISK WARNING".

3 Press the [>] button, then press the [∨] or [∧] button to select "OFF".

[Settings] (◆ indicates default setting.)

Setting	Description
OFF	Recording is stopped when the alarm recording area becomes full.
◆ON	Overwriting automatically starts from the beginning of the alarm recording area when it becomes full.

! CAUTION

● Each menu setting should be performed for each individual unit.

4 Press the [>] button to move the cursor to "REMAINING DISK WARNING" and press the [>] button, then press the [∨] or [∧] button to select a remaining capacity value.

(Example: 5%)
The remaining capacity can be set anywhere between 1% (default) and 10%.

```
           <RECORDING CONDITIONS SET>
SERIES RECORDING        :  OFF

AUTO DELETE             :  OFF

NORMAL RECORDING AREA
  OVERWRITE             :  OFF
ALARM RECORDING AREA
  OVERWRITE             :  OFF
REMAINING DISK WARNING  :  5 %
```
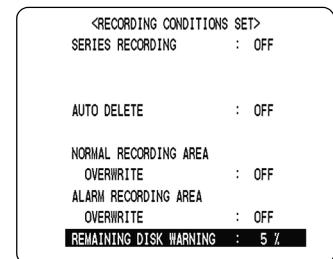
5 Press the [EXIT/OSD] button.

The display returns to the normal screen.
A warning will be displayed in the operation display area when the remaining capacity for any recording area reaches setting value. In addition, the ALARM indicator (for the normal recording area) or the ALARM FULL indicator (for the alarm recording area) will flash at this time.

FULL indicator   ALARM FULL indicator

Operation display area   Remaining capacity display

```
            ●        5%
10-20-04  ALARM  0000
08:30:00  EN     10FPS
```
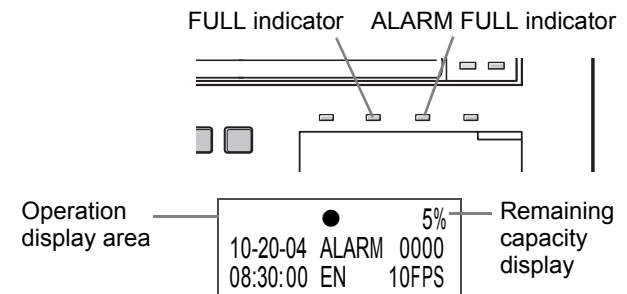
When the normal recording area or the alarm recording area become full

Set the "NORMAL RECORDING AREA" and/or the "ALARM RECORDING AREA" on the <RECORDING AREA SET> screen again. (→P. 55)

```
        <RECORDING AREA SET>
TOTAL CAPACITY           :   81GB
NORMAL RECORDING AREA    :   60 %
    AREA FULL RESET   ->
ALARM RECORDING AREA     :   39 %
    AREA FULL RESET   ->
ARCHIVE AREA             :    1 %
    AREA FULL RESET   ->

CAUTION : WHEN THE AREA SETTING IS CHANGED,
          THE WHOLE AREA WILL BE INITIALIZED !
```

```
      <RECORDING CONDITIONS SET>
SERIES RECORDING          :  OFF


AUTO DELETE               :  OFF

NORMAL RECORDING AREA
  OVERWRITE               :  OFF
ALARM RECORDING AREA
  OVERWRITE               :  OFF
REMAINING DISK WARNING    :  1 %
```
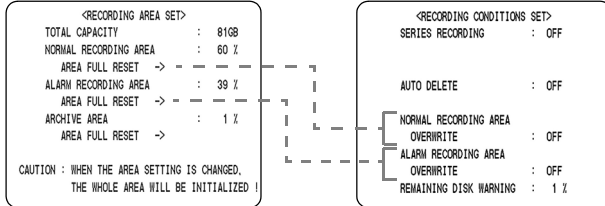
Setting AUTO DELETE

You can set a storage period for recorded data as described below. When the set period has expired, the corresponding data will be automatically deleted.

1 Move the cursor to "AUTO DELETE" and press the [⟩] button.

```
      <RECORDING CONDITIONS SET>
SERIES RECORDING          :  OFF



AUTO DELETE               :  OFF


NORMAL RECORDING AREA
  OVERWRITE               :  ON
ALARM RECORDING AREA
  OVERWRITE               :  ON
REMAINING DISK WARNING    :  **
```
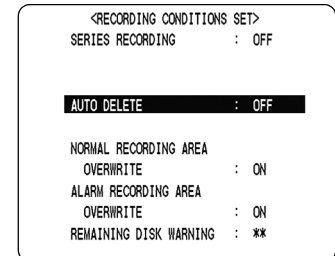
2 Press the [⋁] or [⋀] button to select the storage duration.

Setting of the storage period for recorded data is possible within a range of "OFF" to "99 DAYS".
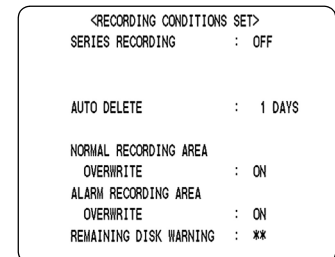
```
      <RECORDING CONDITIONS SET>
SERIES RECORDING          :  OFF



AUTO DELETE               :  1 DAYS


NORMAL RECORDING AREA
  OVERWRITE               :  ON
ALARM RECORDING AREA
  OVERWRITE               :  ON
REMAINING DISK WARNING    :  **
```

3 Press the [⟩] button.

4 Press the [EXIT/OSD] button.

The display returns to the normal screen.

SETTINGS <MAIN MENU 1>

58 English

NORMAL REC MODE SET

<MAIN MENU 1>

```
          <MAIN MENU 1>
1. LANGUAGE/CLOCK SET      ->
2. VIDEO INPUT SET         ->
3. RECORDING AREA SET      ->
4. RECORDING CONDITIONS SET ->
5. NORMAL REC MODE SET     ->
6. TIMER SET               ->
7. HOLIDAY SET             ->
8. ALARM REC MODE SET      ->
TO MAIN MENU 2             ->
       SELECT : ↕↔,   SET : ENTER
```

[MENU] button   [∧] button   [˃] button

[∨] button   [EXIT/OSD] button
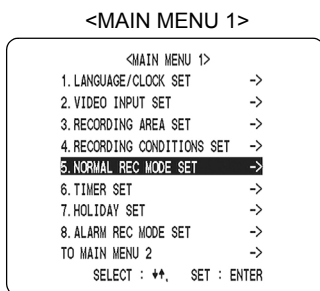
Follow the procedures below to select the recording picture quality, recording method (i.e., frame or field), audio recording, and recording rate for the normal recording area.

1 Press the [MENU] button.

The <MAIN MENU 1> screen appears.

2 Select "5. NORMAL REC MODE SET" and press the [˃] button.

The <NORMAL REC MODE SET> screen appears.

```
        <NORMAL REC MODE SET>
PICTURE QUALITY      : ENHANCED
FRAME/FIELD RECORDING : FIELD
AUDIO RECORDING      : OFF
REC RATE    :    10 FPS (   0H)
```

3 Press the [˃] button.

"ENHANCED" flashes.

4 Press the [∨] or [∧] button to select the picture quality, then press the [˃] button.

```
        <NORMAL REC MODE SET>
PICTURE QUALITY      : NORMAL
FRAME/FIELD RECORDING : FIELD
AUDIO RECORDING      : OFF
REC RATE    :    10 FPS (   1H)
```

[Settings] (◆ indicates default setting.)

Setting	Description
SUPER FINE (SF)	Super Fine: 50 kB
FINE (FI)	Fine: 42 kB
◆ENHANCED (EN)	Enhanced: 30 kB
NORMAL (NO)	Normal: 22 kB
BASIC (BA)	Basic: 15 kB

5 Press the [˃] button after moving the cursor to "FRAME/FIELD RECORDING". And press the [∨] or [∧] button to change the setting, then press the [˃] button.

```
        <NORMAL REC MODE SET>
PICTURE QUALITY      : NORMAL
FRAME/FIELD RECORDING : FIELD
AUDIO RECORDING      : OFF
REC RATE    :    10 FPS (   1H)
```

[Settings] (◆ indicates default setting.)

Setting	Description
◆FIELD	Sets the recording method to field. This is the normal recording method.
FRAME	Sets the recording method to frame. This method is used when the resolution of still-type images is to be improved. Note, however, that this method is not suitable for fast-moving images as they can become blurred.

6 Press the [˃] button after moving the cursor to "AUDIO RECORDING". And press the [∨] or [∧] button to change the setting, then press the [˃] button.

(Example: ON)
When this is set to "ON", the letter "A (indicating that audio will be recorded)" is displayed in front of the recording rate set by "REC RATE".

```
        <NORMAL REC MODE SET>
PICTURE QUALITY      : NORMAL
FRAME/FIELD RECORDING : FIELD
AUDIO RECORDING      : ON
REC RATE    :   A 10 FPS (   1H)
```

A
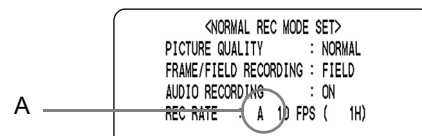
NOTE

● With audio recording, the recording rate can be set between 60.00 and 10.00 FPS in the case of field recording, and between 30.00 and 5.00 FPS in the case of frame recording.
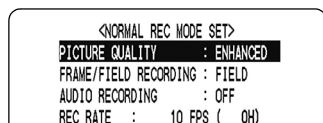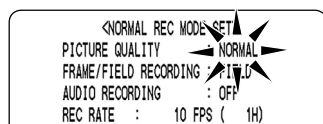● When set to "ON", the letter "A (indicating that audio will be recorded)" is displayed in front of the recording rate set by "REC RATE". As both images and audio will be stored in the normal recording area, this area's overall capacity will reduce accordingly.

7 Press the [˃] button after moving the cursor to "REC RATE". And press the [∨] or [∧] button to change the setting, then press the [˃] button.

(Example: 7.50)
The recording time depends on the combined setting of "PICTURE QUALITY" and "REC RATE". For more details, see "Table of recording rate and times" (→P. 46).

```
        <NORMAL REC MODE SET>
PICTURE QUALITY      : NORMAL
FRAME/FIELD RECORDING : FIELD
AUDIO RECORDING      : ON
REC RATE    :    7.5 FPS (   1H)
```

8 Press the [EXIT/OSD] button.

The display returns to the normal screen.

6 TIMER SET

<MAIN MENU 1>

```
<MAIN MENU 1>
1. LANGUAGE/CLOCK SET      ->
2. VIDEO INPUT SET         ->
3. RECORDING AREA SET      ->
4. RECORDING CONDITIONS SET ->
5. NORMAL REC MODE SET     ->
6. TIMER SET               ->
7. HOLIDAY SET             ->
8. ALARM REC MODE SET      ->
TO MAIN MENU 2             ->
   SELECT : ↕,   SET : ENTER
```

[MENU] button   [∧] button   [>] button
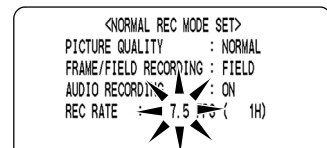
[∨] button   [EXIT/OSD] button

You can set recording start/stop times using the timer function.

Timer setting items

You can set times at which to start and stop recording on each specified day of the week in addition to the corresponding recording rate.

```
(3)                              (4)
(2)            <TIMER SET>
      WEEK  START  STOP   REC RATE      SET     (5)
(1)   SUN  --:-- --:--    10FPS (  0H)  OFF
      MON  --:-- --:--    10FPS (  0H)  OFF
      TUE  --:-- --:--    10FPS (  0H)  OFF
      WED  --:-- --:--    10FPS (  0H)  OFF
      THU  --:-- --:--    10FPS (  0H)  OFF
      FRI  --:-- --:--    10FPS (  0H)  OFF
(6)   SAT  --:-- --:--    10FPS (  0H)  OFF
      DLY  --:-- --:--    10FPS (  0H)  OFF
```

(1) WEEK
Used to select the days of the week for timer settings. When each day in the "WEEK" column is flashing, it can be set to other days. The 7th line (default: "SAT") and 8th line (default: "DLY") are used for timer recording settings of over 24 hours.

(2) START
Enter the time at which to start timer recording.

(3) STOP
Enter the time at which to stop timer recording.

(4) REC RATE
● Sets the recording rate.
● Default settings
  Field recording: 10.00 FPS
  Frame recording: 5.00 FPS
● Time values displayed in parentheses are calculated automatically based on recording method, picture quality, audio recording, and the like.
  The maximum possible display value is 9999H.
  Accordingly, 9999* is displayed for values of 10000H or more.

(5) SET
Setting "ON" enables the entered timer recording setting.
Setting "OFF" disables the entered timer recording setting.

(6) Used for timer recording settings of over 24 hours
Use these lines for timer recording spanning more than 24 hours.

> **NOTE**
> ● The setting values from <NORMAL REC MODE SET> are adopted for the picture quality, frame/field recording, and audio recording for timer recording. (→P. 59)

Making timer reservations every day at the same time with the same image quality

Example:
Making a timer recording every day from 8:30 to 18:30 with the same recording rate

1 Press the [MENU] button.

The <MAIN MENU 1> screen appears.

2 Select "6. TIMER SET" and press the [>] button.

The <TIMER SET> screen appears.

```
            <TIMER SET>
WEEK  START  STOP   REC RATE      SET
SUN  --:-- --:--    10FPS (  0H)  OFF
MON  --:-- --:--    10FPS (  0H)  OFF
TUE  --:-- --:--    10FPS (  0H)  OFF
WED  --:-- --:--    10FPS (  0H)  OFF
THU  --:-- --:--    10FPS (  0H)  OFF
FRI  --:-- --:--    10FPS (  0H)  OFF
SAT  --:-- --:--    10FPS (  0H)  OFF
DLY  --:-- --:--    10FPS (  0H)  OFF
```
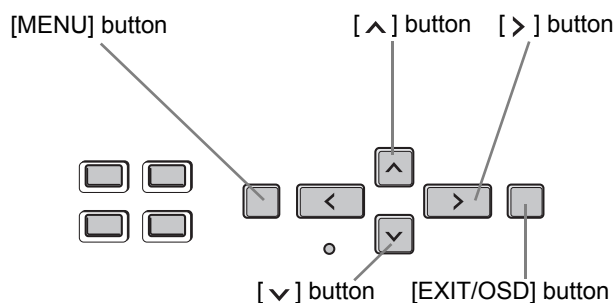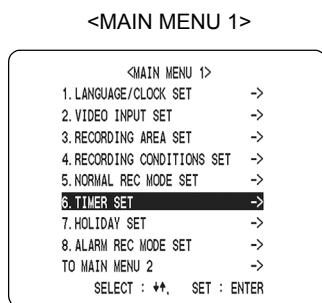
3 Press the [>] button.

"SUN" under "WEEK" flashes.

SUN --:-- --:--   10FPS (0H) OFF

60

4 Press the [∨] or [∧] button to change "SUN" to "DLY".

⚠ CAUTION

● If "DLY" is set for any row, timer recording on Sundays will also be carried out in accordance with that row's settings. In other words, "DLY" includes Sundays and is given priority over other settings.

5 Press the [>] button to move the cursor to the next item, then press the [∨] or [∧] button to make the required setting.

Each time you press the [>] button, the cursor moves to the following items:
WEEK → START time (hours, minutes) → STOP time (hours, minutes) → REC RATE (FPS) → SET.

DLY ⟶ --:-- ⟶ --:-- 10FPS (0H) OFF

▼

DLY 08:30 18:30 7.5FPS (63H) ON

■ To change a displayed setting item

Press the [<] or [>] button to move the flashing area to the item you want to change, then press the [∨] or [∧] button to change the setting.

<TIMER SET>
WEEK	START	STOP	REC RATE		SET
DLY	08:30	18:30	7.5FPS (	63H)	ON
MON	--:--	--:--	10FPS (	0H)	OFF
TUE	--:--	--:--	10FPS (	0H)	OFF
WED	--:--	--:--	10FPS (	0H)	OFF
THU	--:--	--:--	10FPS (	0H)	OFF
FRI	--:--	--:--	10FPS (	0H)	OFF
SAT	--:--	--:--	10FPS (	0H)	OFF
DLY	--:--	--:--	10FPS (	0H)	OFF

■ Picture quality and recording rate for timer recording

● The picture quality used for recording is set by "PICTURE QUALITY" in the <NORMAL REC MODE SET> screen. (→P. 59)

6 When finished making the settings, press the [EXIT/OSD] button.

The display returns to the normal screen.

7 Press the [TIMER] button.

The TIMER indicator lights, and the recorder enters timer recording standby mode.

■ To set different recording times and/or recording rate for each day of the week

Set the desired recording times and recording rate for each day.

■ If timer reservation days overlap

The timer reservation that starts first will have priority.

To cancel all set timer reservations

1 Press the [MENU] button.

The <MAIN MENU 1> screen appears.

2 Select "6.TIMER SET" and press the [>] button.

The <TIMER SET> screen appears.

<TIMER SET>
WEEK	START	STOP	REC RATE		SET
DLY	08:30	18:30	7.5FPS (	63H)	ON
MON	--:--	--:--	10FPS (	0H)	OFF
TUE	--:--	--:--	10FPS (	0H)	OFF
WED	--:--	--:--	10FPS (	0H)	OFF
THU	--:--	--:--	10FPS (	0H)	OFF
FRI	--:--	--:--	10FPS (	0H)	OFF
SAT	--:--	--:--	10FPS (	0H)	OFF
DLY	--:--	--:--	10FPS (	0H)	OFF

3 With the <TIMER SET> screen displayed, press the [MENU RESET] button.

The timer setting details will be cleared and default values will be restored.

[MENU RESET] button
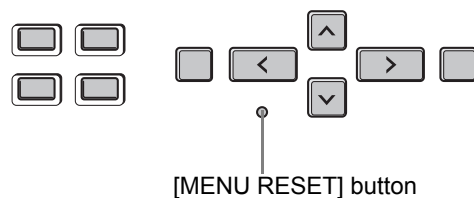
Timer reservations spanning more than 24 hours

Follow the procedures below to set timer recordings spanning more than 24 hours. These settings are made using lines 7 (default: "SAT") and 8 (default: "DLY") of the <TIMER SET> screen.

Example:
Timer recording from 10:30 on Monday to 20:30 on Wednesday

1 Press the [∨] or [∧] button to move the cursor to the line 7 "SAT", then press the [>] button.

"SAT" in the "WEEK" column flashes.
You can change the setting of the flashing item.

Line 7

2 Set the items in the "WEEK" and "START" columns.

(1) Press the [∨] or [∧] button to change "SAT" to "MON", then press the [>] button.

(2) Press the [∨] or [∧] button to change "--" to "10", then press the [>] button.

(3) Press the [∨] or [∧] button to change "--" to "30", then press the [>] button.

3 Press the [∨] or [∧] button to change the "STOP" time from "--:--" to "**:**", then press the [>] button.

The "DLY" item on the line 8 automatically changes to "TUE" (the next day on line 7) and flashes. Items that don't need to be set are displayed as asterisks (*).

4 Set the end "WEEK" and "STOP" time. Switch "SET" to "ON".

(1)   (2) (3)   (4)   (5)

(1) Press the [∨] or [∧] button to change "TUE" to "WED", then press the [>] button.
(2) Press the [∨] or [∧] button to change "--" to "20", then press the [>] button.
(3) Press the [∨] or [∧] button to change "--" to "30", then press the [>] button.
(4) Press the [∨] or [∧] button to set "REC RATE".
(5) Press the [∨] or [∧] button to change "OFF" to "ON".

5 Press the [EXIT/OSD] button.

The display returns to the normal screen.

6 Press the [TIMER] button.

The TIMER indicator lights, and the recorder enters timer recording standby mode.

SETTINGS <MAIN MENU 1>

7 HOLIDAY SET

<MAIN MENU 1>

```
        <MAIN MENU 1>
1.LANGUAGE/CLOCK SET      ->
2.VIDEO INPUT SET         ->
3.RECORDING AREA SET      ->
4.RECORDING CONDITIONS SET ->
5.NORMAL REC MODE SET     ->
6.TIMER SET               ->
7.HOLIDAY SET             ->
8.ALARM REC MODE SET      ->
TO MAIN MENU 2            ->
        SELECT : ↓↑,  SET : ENTER
```

[MENU] button   [∧] button   [>] button

[∨] button   [EXIT/OSD] button
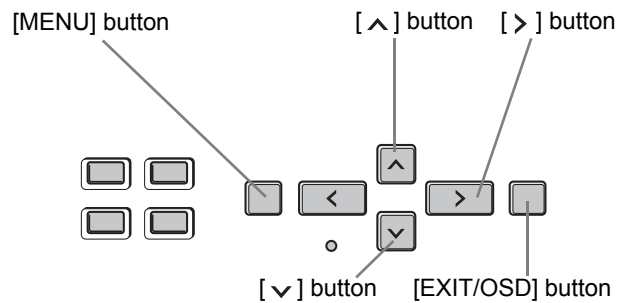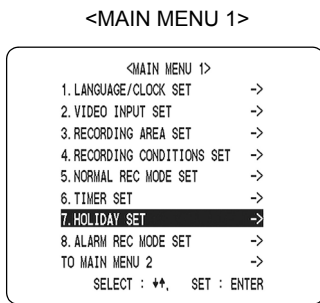
You can set specific dates as holidays to have the operation for Sunday used on those days also.
Dates such as national holidays and company off days should be set as holidays when you want those dates to have the same security as Sundays.

[Setting conditions]
● After completing timer settings for Sunday "SUN", make sure to switch "SET" to "ON". (→P. 60)

```
              <TIMER SET>
WEEK  START  STOP  REC RATE         SET
SUN   08:30  18:30  7.5FPS (  1H)   ON
MON   --:--  --:--   10FPS (  0H)   OFF
TUE   --:--  --:--   10FPS (  0H)   OFF
WED   --:--  --:--   10FPS (  0H)   OFF
THU   --:--  --:--   10FPS (  0H)   OFF
FRI   --:--  --:--   10FPS (  0H)   OFF
SAT   --:--  --:--   10FPS (  0H)   OFF
DLY   --:--  --:--   10FPS (  0H)   OFF
```

Example: To set November 17 as a holiday

1 Press the [MENU] button.

The <MAIN MENU 1> screen appears.

2 Press the [∨] or [∧] button to select "7. HOLIDAY SET" and press the [>] button.

The <HOLIDAY SET> screen is displayed, with the cursor positioned on "1".

```
          <HOLIDAY SET>
  1. -----      11. -----
  2. -----      12. -----
  3. -----      13. -----
  4. -----      14. -----
  5. -----      15. -----
  6. -----      16. -----
  7. -----      17. -----
  8. -----      18. -----
  9. -----      19. -----
 10. -----      20. -----
```

3 Set the month and day in item No. 1.

(1) Press the [>] button to make "--" (the month) flash.
(2) Press the [∨] or [∧] button to set "--" to "11".
(3) Press the [>] button to make "--" (the day) flash.
(4) Press the [∨] or [∧] button to set "--" to "17".

```
1. 11-17
```
Day
Month
No.
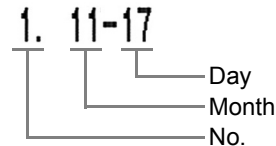
4 After entering the setting, press the [>] button.

The cursor moves to "2".

5 Repeat procedures 3 and 4 to set other holidays as needed.

6 Press the [EXIT/OSD] button.

The display returns to the normal screen.

7 Press the [TIMER] button.

The TIMER indicator lights, and the recorder enters timer recording standby mode.

<MAIN MENU 1>

```
<MAIN MENU 1>
1. LANGUAGE/CLOCK SET        ->
2. VIDEO INPUT SET           ->
3. RECORDING AREA SET        ->
4. RECORDING CONDITIONS SET  ->
5. NORMAL REC MODE SET       ->
6. TIMER SET                 ->
7. HOLIDAY SET               ->
8. ALARM REC MODE SET        ->
TO MAIN MENU 2               ->
      SELECT : ↕,   SET : ENTER
```

[MENU] button   [∧] button   [>] button

[∨] button   [EXIT/OSD] button

Setting alarm recording

Follow the procedures below to select the recording picture quality, recording method (i.e., frame or field), audio recording, and recording rate for the alarm recording area.

1 Press the [MENU] button.

The <MAIN MENU 1> screen appears.

2 Select "8. ALARM REC MODE SET" and press the [>] button.
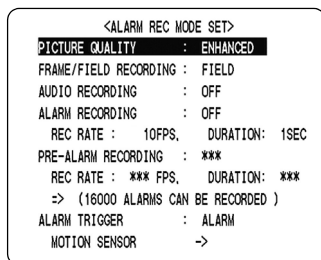
The <ALARM REC MODE SET> screen appears.

```
<ALARM REC MODE SET>
PICTURE QUALITY       : ENHANCED
FRAME/FIELD RECORDING : FIELD
AUDIO RECORDING       : OFF
ALARM RECORDING       : OFF
  REC RATE :   10FPS,   DURATION: 1SEC
PRE-ALARM RECORDING   : ***
  REC RATE : *** FPS,  DURATION: ***
  -> (16000 ALARMS CAN BE RECORDED )
ALARM TRIGGER         : ALARM
  MOTION SENSOR       ->
```

3 Press the [>] button.

"ENHANCED" flashes.

4 Press the [∨] or [∧] button to select the picture quality.

[Settings] (◆ indicates default setting.)

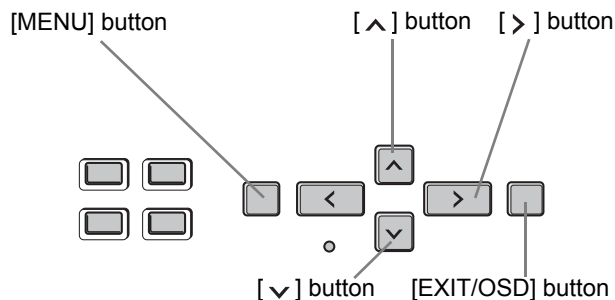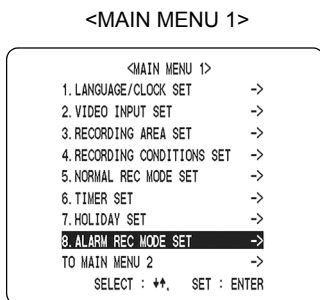| Setting	Description
SUPER FINE	Super Fine: 50 kB
FINE	Fine: 42 kB
◆ENHANCED	Enhanced: 30 kB
NORMAL	Normal: 22 kB
BASIC	Basic: 15 kB

5 Move the cursor to "FRAME/FIELD RECORDING" and press the [>] button, then press the [∨] or [∧] button to change the setting.

```
<ALARM REC MODE SET>
PICTURE QUALITY       : ENHANCED
FRAME/FIELD RECORDING : FIELD
AUDIO RECORDING       : OFF
ALARM RECORDING       : OFF
  REC RATE :   10FPS,   DURATION: 1SEC
PRE-ALARM RECORDING   : ***
  REC RATE : *** FPS,  DURATION: ***
  -> (16000 ALARMS CAN BE RECORDED )
ALARM TRIGGER         : ALARM
  MOTION SENSOR       ->
```
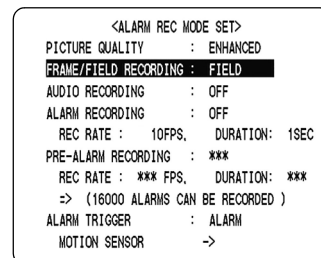
[Settings] (◆ indicates default setting.)

Setting	Description
◆FIELD	Sets the recording method to field.
FRAME	Sets the recording method to frame.

6 Move the cursor to "AUDIO RECORDING" and press the [>] button, then press the [∨] or [∧] button to change the setting.

When this is set to "ON", the letter "A (indicating that audio will be recorded)" is displayed in front of "REC RATE", and the maximum number of images that can be recorded is displayed at the bottom of the screen.

```
<ALARM REC MODE SET>
PICTURE QUALITY       : ENHANCED
FRAME/FIELD RECORDING : FIELD
AUDIO RECORDING       : ON
ALARM RECORDING       : ENABLED
  REC RATE : A 10FPS,  DURATION: 1SEC
PRE-ALARM RECORDING   : OFF
  REC RATE : *** FPS,  DURATION: ***
  -> (16000 ALARMS CAN BE RECORDED )
ALARM TRIGGER         : ALARM
  MOTION SENSOR       ->
```
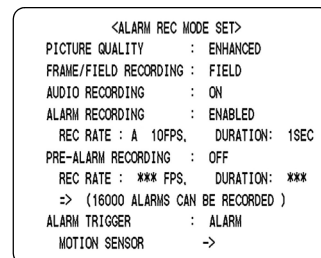
SETTINGS <MAIN MENU 1>

[Settings] (◆ indicates default setting.)

Setting	Description
◆ OFF	Audio recording is not carried out
ON	Audio recording is carried out

[Setting conditions]
● This can be set whenever the recording rate is 10.00 FPS or more for field recording, or 5.00 FPS or more for frame recording.

7 Move the cursor to "ALARM RECORDING" and press the [>] button, then press the [∨] or [∧] button to change the setting.

```
          <ALARM REC MODE SET>
PICTURE QUALITY      :  ENHANCED
FRAME/FIELD RECORDING :  FIELD
AUDIO RECORDING      :  ON
ALARM RECORDING      :  ENABLED
  REC RATE : A  10FPS,    DURATION : 1SEC
PRE-ALARM RECORDING  :  OFF
  REC RATE :  *** FPS,    DURATION:  ***
  => (16000 ALARMS CAN BE RECORDED )
ALARM TRIGGER        :  ALARM
  MOTION SENSOR        ->
```

[Settings] (◆ indicates default setting.)

Setting	Description
◆ OFF	Does not perform alarm recording.
ENABLED	Always performs alarm recording, regardless of whether or not timer recording is being performed.
AL-REC ON TIMER	Performs alarm recording only during timer recording.
AL-REC OFF TIMER	Performs alarm recording only when timer recording is not being performed.
* DLY AL-REC ON TMR	Performs alarm recording only for the amount of time set by the timer. Normal recording is not performed.

* "DLY AL-REC ON TMR" is enabled just by making timer settings. There is no need to press the [TIMER] button.

8 Move the cursor to "REC RATE" and "DURATION" and press the [>] button, then press the [∨] or [∧] button to change the setting.

The maximum number of images (shown in parentheses) changes in accordance with the new settings.

Maximum number of images

```
ALARM RECORDING      :  ENABLED
REC RATE : A  10FPS,    DURATION:  1SEC
PRE-ALARM RECORDING  :  OFF
  REC RATE :  *** FPS,    DURATION:  ***
  => (16000 ALARMS CAN BE RECORDED )
ALARM TRIGGER        :  ALARM
```

[Settings]

Setting	Description	
REC RATE	60.00 to 0.03 FPS (for field recording) 30.00 to 0.02 FPS (for frame recording)	Sets the recording rate.
DURATION	1 second to 15 minutes, *CC	Sets the recording time per alarm.

*CC: Operates while an alarm is being activated.

When alarm recording settings have been completed

Press the [EXIT/OSD] button.

The display returns to the normal screen.
"ALARM" appears in the operation display area.
When an alarm occurs, the number of alarms is displayed.

Number of alarm recordings

Alarm display

```
10-20-04  ALARM  0000
08:30:00  EN     10FPS
```

▸ **NOTE** ▸

● **If a new alarm occurs during alarm recording**
Recording switches from the previous alarm image to the new alarm image in a seamless process. If a number of different alarms occur, these are treated as a single alarm until an alarm interruption occurs.

⚠ **CAUTION**

● Settings cannot be made for "PRE-ALARM RECORDING" when "ALARM RECORDING" is set to "OFF".
● The alarm history (recording list) displays up to the last 9,999 items. (Although the history can record up to 16,000 items, only 9,999 of these can be displayed on-screen.)
● When the normal recording area is set to "*1%", alarm recording is performed for as long as space is left in the alarm recording area. For "1%" and other settings, up to 16,000 items are recorded per hard disk.

Setting pre-alarm recording

1 Move the cursor to "PRE-ALARM RECORDING" and press the [>] button, then press the [∨] or [∧] button to change the setting.

```
            <ALARM REC MODE SET>
PICTURE QUALITY      :  ENHANCED
FRAME/FIELD RECORDING :  FIELD
AUDIO RECORDING      :  ON
ALARM RECORDING      :  ENABLED
  REC RATE : A  10FPS,   DURATION: 1SEC
PRE-ALARM RECORDING  :  OFF
  REC RATE :  *** FPS,   DURATION:  ***
  =>  (16000 ALARMS CAN BE RECORDED )
```

[Settings] (◆ indicates default setting.)

Setting	Description
◆ OFF	Pre-alarm recording is not carried out
ON	Pre-alarm recording is carried out

2 Move the cursor to "REC RATE" and "DURATION" and press the [>] button, then press the [∨] or [∧] button to change the setting.

The maximum number of images (shown in parentheses) changes in accordance with the new settings.

```
ALARM RECORDING      :  ENABLED
  REC RATE : A  10FPS,   DURATION: 1SEC
PRE-ALARM RECORDING  :  ON
  REC RATE : A  10FPS,   DURATION: 1MIN
  =>  (00660 ALARMS CAN BE RECORDED )
ALARM TRIGGER        :  ALARM
  MOTION SENSOR       ->
```

Maximum number of images

[Setting conditions]
● When performing pre-alarm recording with a "FIELD" recording rate, short settings (i.e., 60.00 or 30.00 FPS) cannot be made for "REC RATE". (→P. 48)
● When normal recording and pre-alarm recording are performed simultaneously, audio will not be recorded together with the pre-alarm recording image.
● When pre-alarm recording and normal recording are performed simultaneously with a multiplexer connected, the recording rate for pre-alarm recording should be set to a shorter rate than that for normal recording.

⚠ CAUTION

● Although the image from a single camera may be recorded continuously when a short recording rate is set, a long rate can result in no images being recorded during normal recording.

When settings have been completed

Press the [EXIT/OSD] button.

The display returns to the normal screen.
"PRE" appears in the operation display area. When an alarm occurs, "ALARM" is displayed.

Number of alarm recordings

PRE display

```
10-20-04 PRE   0023
08:30:00 EN   10FPS
```
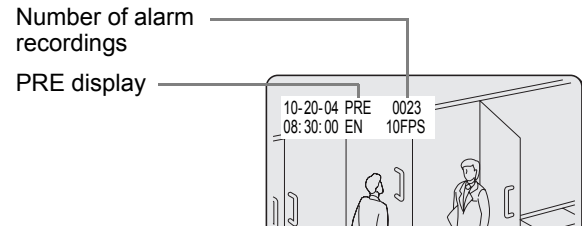
Setting the alarm trigger

This setting indicates how intruders are to be detected.

1 Move the cursor to "ALARM TRIGGER" and press the [>] button, then press the [∨] or [∧] button to change the setting.

```
PRE-ALARM RECORDING  :  ON
  REC RATE : A  10FPS,   DURATION: 1MIN
  =>  (00660 ALARMS CAN BE RECORDED )
ALARM TRIGGER        :  ALARM
  MOTION SENSOR       ->
```

[Settings] (◆ indicates default setting.)

Setting	Description
◆ ALARM	Performs alarm recording when an external alarm is generated (when a switch is attached to the alarm input terminal on the rear panel, and the switch is activated).
SENSOR	Performs alarm recording when a motion sensor detects movement. See the information on setting motion sensors. (→P. 67)
ALARM AND SENSOR	Performs alarm recording when both the external alarm and a motion sensor are activated simultaneously.
ALARM OR SENSOR	Performs alarm recording when either the external alarm or a motion sensor is activated.

[Setting conditions]
● When sensor selection has been made (i.e., "SENSOR", "ALARM AND SENSOR", or "ALARM OR SENSOR") it will be necessary to set the motion sensors. (→P. 67)

NOTE ▶

- This unit's motion sensors cannot be used when a multiplexer is connected. In such a case, please use the multiplexer's motion sensors.
- When using the multiplexer's motion sensors, connect the alarm output on the multiplexer to this unit's alarm input.
- When using a multiplexer, connect its ground terminal and the recorder's ground terminal.
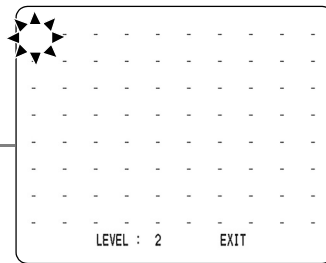
Setting the motion sensor

If a motion sensor is set on the monitor, alarm recording will be carried out when a moving subject is detected.

1 Move the cursor to "MOTION SENSOR" and press the [>] button.

The motion sensor screen is displayed.

```
ALARM TRIGGER        : ALARM AND SENSOR
MOTION SENSOR          ->
```

Motion sensor screen

```
                          LEVEL : 2        EXIT
```

2 Press the [>] or [<] button to select sensor operation positions (up to 80), then press the [∨] or [∧] button to confirm the selection.

Press the [∨] or [∧] button to turn sensors "ON" (shown as ▌) and "OFF" (shown as ▬).

Setting example

```
                          LEVEL : 2        EXIT
```
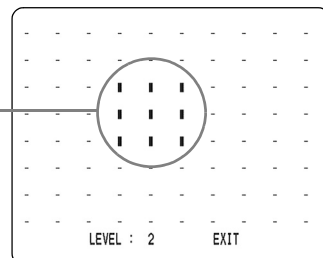
3 Move the cursor to "LEVEL", then press the [∨] or [∧] button to change the setting.

```
                     LEVEL : 2      EXIT
```

[Settings] (◆ indicates default setting.)

Setting	Description
◆ OFF	Not carried out
1 to 10	Motion sensing will be carried out. Lower values correspond to higher sensitivities.

4 Move the cursor to "EXIT", then press the [∨] or [∧] button to return to the <ALARM REC MODE SET> screen.

```
                     LEVEL : 2      EXIT
```
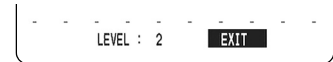
5 Press the [EXIT/OSD] button.

The display returns to the normal screen.

■ **If recording is ended during alarm recording using the motion sensor**

Set the sensitivity from the motion sensor screen to "OFF". (See the procedure 3.)

NOTE ▶

- Pressing the [MENU RESET] button in the motion sensor screen sets the entire row in which the cursor is located.

1 DISPLAY/VIDEO LOSS SET

<MAIN MENU 2>

```
        <MAIN MENU 2>
1.DISPLAY/VIDEO LOSS SET   ->
2.RS-232C/RS-485 SET       ->
3.BUZZER SET               ->
4.SECURITY LOCK SET        ->
5.NETWORK SET              ->
6.HDD SET                  ->
7.POWER FAILURE/USED TIME  ->

TO MAIN MENU 1             ->
        SELECT : ++,  SET : ENTER
```

The <DISPLAY SET> screen lets you turn off the display of the date, time, or other information in the operation display area on the screen. Use this screen to make settings as needed.
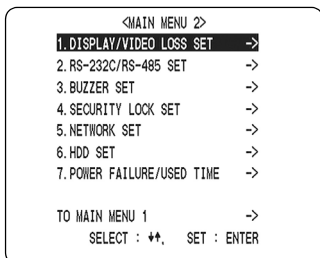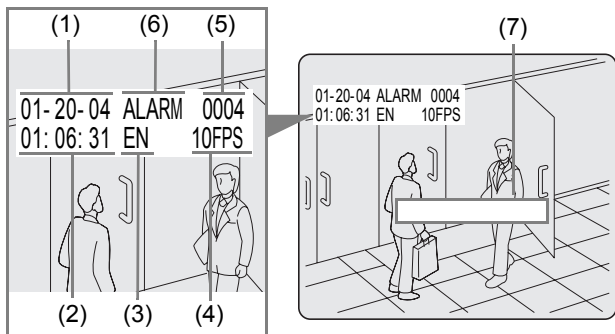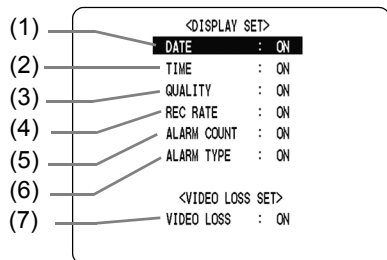
<DISPLAY SET> and <VIDEO LOSS SET> setting items

```
        <DISPLAY SET>
(1) ── DATE          :  ON
(2) ── TIME          :  ON
(3) ── QUALITY       :  ON
(4) ── REC RATE      :  ON
(5) ── ALARM COUNT   :  ON
(6) ── ALARM TYPE    :  ON

        <VIDEO LOSS SET>
(7) ── VIDEO LOSS    :  ON
```

```
(1)    (6)    (5)                    (7)

01-20-04 ALARM  0004      01-20-04 ALARM 0004
01:06:31 EN    10FPS      01:06:31 EN    10FPS

(2)    (3)    (4)
```

[Settings] (◆ indicates default setting.)

	Item	Setting	Description
(1)	DATE	◆ON	Turns on display of the date in the operation display area.
		OFF	Turns off display of the date in the operation display area.
(2)	TIME	◆ON	Turns on display of the time in the operation display area.
		OFF	Turns off display of the time in the operation display area.
(3)	QUAL-ITY	◆ON	Turns on display of the picture quality in the operation display area.
		OFF	Turns off display of the picture quality in the operation display area.
(4)	REC RATE	◆ON	Turns on display of the recording rate in the operation display area.
		OFF	Turns off display of the recording rate in the operation display area.
(5)	ALARM COUNT	◆ON	Turns on display of the alarm count in the operation display area.
		OFF	Turns off display of the alarm count in the operation display area.

	Item	Setting	Description
(6)	ALARM TYPE	◆ON	Turns on display of the alarm type in the operation display area.
		OFF	Turns off display of the alarm type in the operation display area.
(7)	VIDEO LOSS	◆ON	"VIDEO LOSS!" is displayed when the camera image is interrupted.
		OFF	"VIDEO LOSS!" is not displayed, even when the camera image is interrupted.

Settings

[MENU] button   [<] button   [∧] button   [>] button

[∨] button   [EXIT/OSD] button
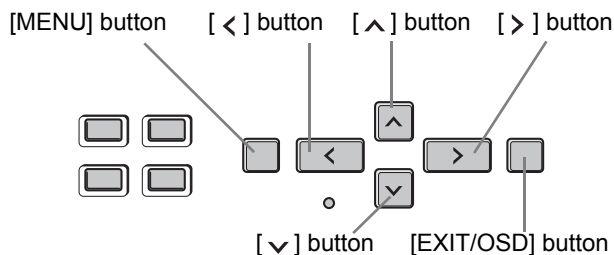
1 Press the [MENU] button twice.

The <MAIN MENU 2> screen appears.

2 Press the [∨] or [∧] button to select "1. DISPLAY/VIDEO LOSS SET" and press the [>] button.
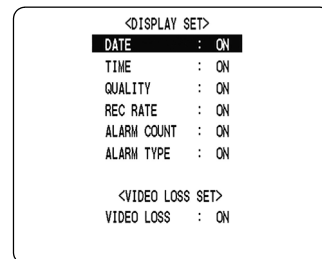
The <DISPLAY/VIDEO LOSS SET> screen is displayed.

```
        <DISPLAY SET>
DATE          :  ON
TIME          :  ON
QUALITY       :  ON
REC RATE      :  ON
ALARM COUNT   :  ON
ALARM TYPE    :  ON

        <VIDEO LOSS SET>
VIDEO LOSS    :  ON
```

3 Press the [∨] and [∧] buttons to select the desired function, then press the [>] button.

The setting flashes.

4 Press the [∨] and [∧] buttons to change the setting, then press the [>] button.

5 Repeat procedures 3 to 4 to set other functions as needed.

6 When you have finished making the settings, press the [EXIT/OSD] button.

The display returns to the normal screen.

<MAIN MENU 2>

```
        <MAIN MENU 2>
1.DISPLAY/VIDEO LOSS SET   ->
2.RS-232C/RS-485 SET       ->
3.BUZZER SET               ->
4.SECURITY LOCK SET        ->
5.NETWORK SET              ->
6.HDD SET                  ->
7.POWER FAILURE/USED TIME  ->

TO MAIN MENU 1             ->
    SELECT : ↕,   SET : ENTER
```
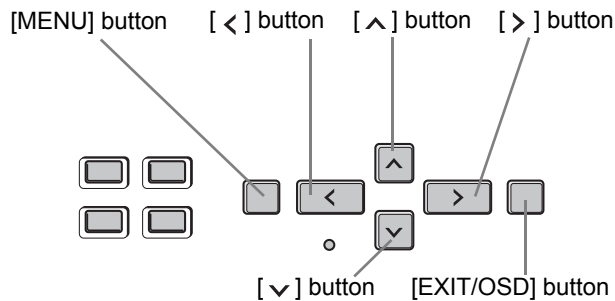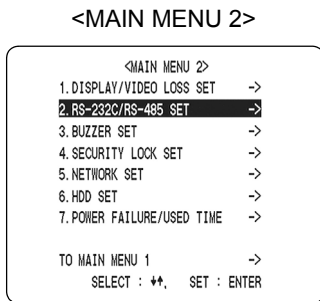
[MENU] button   [<] button   [∧] button   [>] button

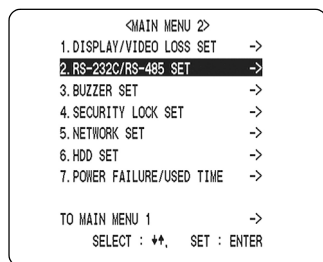[∨] button   [EXIT/OSD] button

Settings for RS-232C and RS-485

This section describes the settings to be made for communicating using an RS-232C or RS-485 cable. (A separately-sold option board will be required in such a case.)
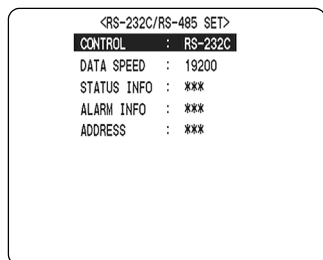
1 Press the [MENU] button twice.

The <MAIN MENU 2> screen appears.

```
        <MAIN MENU 2>
1.DISPLAY/VIDEO LOSS SET   ->
2.RS-232C/RS-485 SET       ->
3.BUZZER SET               ->
4.SECURITY LOCK SET        ->
5.NETWORK SET              ->
6.HDD SET                  ->
7.POWER FAILURE/USED TIME  ->

TO MAIN MENU 1             ->
    SELECT : ↕,   SET : ENTER
```

2 Press the [∨] or [∧] button to select "2. RS-232C/RS-485 SET", and press the [>] button.

The <RS-232C/RS-485 SET> screen appears.

```
    <RS-232C/RS-485 SET>
CONTROL      :  RS-232C
DATA SPEED   :  19200
STATUS INFO  :  ***
ALARM INFO   :  ***
ADDRESS      :  ***
```
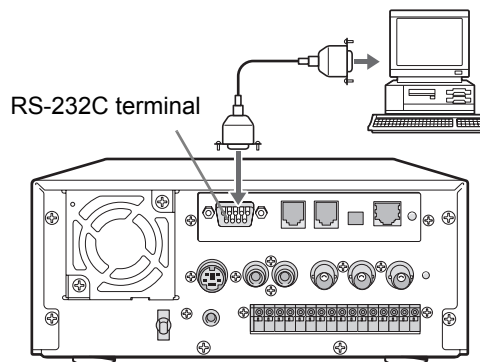
3 Press the [>] button.

"RS-232C" flashes. Press the [∧] or [∨] button to select either "RS-232C" or "RS-485".

When RS-232C is selected

Connect a special RS-232C cable (sold separately) between this unit's RS-232C port and the PC.

RS-232C terminal

4 Select "RS-232C" and press the [>] button.

The cursor moves to "DATA SPEED".

```
    <RS-232C/RS-485 SET>
CONTROL      :  RS-232C
DATA SPEED   :  19200
STATUS INFO  :  ***
ALARM INFO   :  ***
ADDRESS      :  ***
```

```
    <RS-232C/RS-485 SET>
CONTROL      :  RS-232C
DATA SPEED   :  19200
STATUS INFO  :  ***
ALARM INFO   :  ***
ADDRESS      :  ***
```
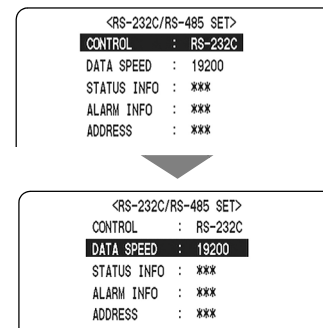
5 Press the [>] button, then the [∨] or [∧] button to select the "DATA SPEED".

Possible selections: 2400, 4800, 9600, and 19200

6 Press the [EXIT/OSD] button.

The display returns to the normal screen.

When RS-485 is selected

Connect the digital video recorder's RS-485 (A, B) control terminals in series to the system controller, multiplexer, digital video recorder, or similar device.

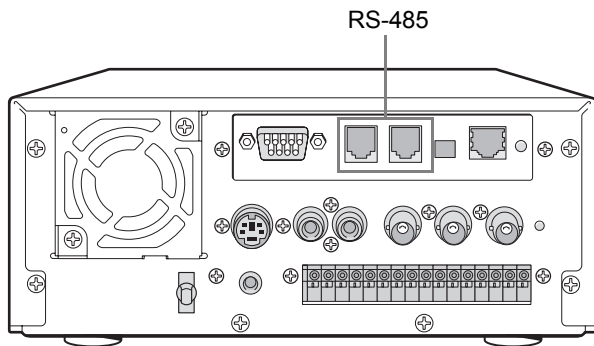RS-485

4 Select "RS-485" and press the [>] button.

The cursor moves to "DATA SPEED".

```
<RS-232C/RS-485 SET>
CONTROL      :  RS-485
DATA SPEED   :  19200
STATUS INFO  :  ON
ALARM INFO   :  ON
ADDRESS      :  000
```

5 Press the [>] button, then the [˅] or [˄] button to set the data speed, and press the [>] button.

Possible selections: 2400, 4800, 9600, and 19200

(Example: 19200)

```
<RS-232C/RS-485 SET>
CONTROL      :  RS-485
DATA SPEED   :  19200
STATUS INFO  :  ON
ALARM INFO   :  ON
ADDRESS      :  000
```

6 Press the [>] button after moving the cursor to "STATUS INFO" and press the [˅] or [˄] button to set "ON". Then press the [>] button.

```
<RS-232C/RS-485 SET>
CONTROL      :  RS-485
DATA SPEED   :  19200
STATUS INFO  :  ON
ALARM INFO   :  ON
ADDRESS      :  000
```

[Settings] (◆ indicates default setting.)

Setting	Description
◆ ON	Status information is transmitted.
OFF	Status information is not transmitted.

7 Press the [>] button after moving the cursor to "ALARM INFO" and press the [˅] or [˄] button to set "ON". Then press the [>] button.

```
<RS-232C/RS-485 SET>
CONTROL      :  RS-485
DATA SPEED   :  19200
STATUS INFO  :  ON
ALARM INFO   :  ON
ADDRESS      :  000
```

[Settings] (◆ indicates default setting.)

Setting	Description
◆ ON	Alarm information is transmitted.
OFF	Alarm information is not transmitted.

8 Press the [>] button after moving the cursor to "ADDRESS" and press the [˅] or [˄] button to change the setting.

```
<RS-232C/RS-485 SET>
CONTROL      :  RS-485
DATA SPEED   :  19200
STATUS INFO  :  ON
ALARM INFO   :  ON
ADDRESS      :  000
```

[Setting conditions]

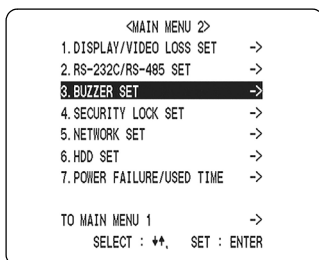● Addresses between "0" and "127" can be set for this unit.

9 Press the [EXIT/OSD] button.
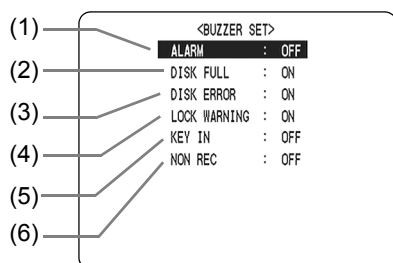
The display returns to the normal screen.

NOTE ▶

● Addresses must not be duplicated when a number of different digital video recorders are being connected. Also, turn on the termination switch for the last digital video recorder in the connection sequence.

SETTINGS <MAIN MENU 2>

<MAIN MENU 2>

```
          <MAIN MENU 2>
1.DISPLAY/VIDEO LOSS SET   ->
2.RS-232C/RS-485 SET       ->
3.BUZZER SET               ->
4.SECURITY LOCK SET        ->
5.NETWORK SET              ->
6.HDD SET                  ->
7.POWER FAILURE/USED TIME  ->

TO MAIN MENU 1             ->
     SELECT : ++,  SET : ENTER
```

The <BUZZER SET> screen lets you set a warning buzzer to sound when events occur such as alarms being generated or the remaining hard disk space reaching zero. Use this screen to make settings as needed.

<BUZZER SET> screen setting items

```
          <BUZZER SET>
(1) ── ALARM          :  OFF
(2) ── DISK FULL      :  ON
(3) ── DISK ERROR     :  ON
(4) ── LOCK WARNING   :  ON
(5) ── KEY IN         :  OFF
(6) ── NON REC        :  OFF
```

[Settings] (◆ indicates default setting.)

	Item	Setting	Description
(1)	ALARM	ON	Sounds buzzer when alarm is generated.
		◆OFF	Does not sound buzzer when alarm is generated.
(2)	DISK FULL	◆ON	When "OVERWRITE" is not set, sounds buzzer when remaining hard disk space reaches zero.
		OFF	When "OVERWRITE" is not set, does not sound buzzer when remaining hard disk space reaches zero.
(3)	DISK ERROR	◆ON	Sounds a buzzer when a hard-disk error occurs.
		OFF	Does not sound a buzzer, even when a hard-disk error occurs.
(4)	LOCK WARNING	◆ON	Sounds buzzer if an operation button is pressed while the security lock is on.
		OFF	Does not sound a buzzer, even if an operation button is pressed while the security lock is on.
(5)	KEY IN	ON	Sounds buzzer when operation button is pressed.
		◆OFF	Does not sound buzzer when operation button is pressed.
(6)	NON REC	ON	Sounds buzzer when recording is stopped.
		◆OFF	Does not sound buzzer when recording is stopped.

NOTE ▶

● Press any button to stop the buzzer sounding. The buzzer stops.

Settings

[MENU] button   [∧] button   [〉] button

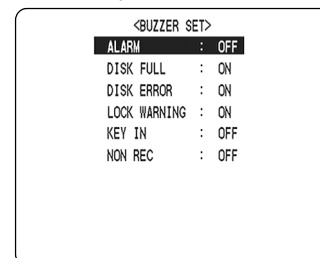[∨] button   [EXIT/OSD] button
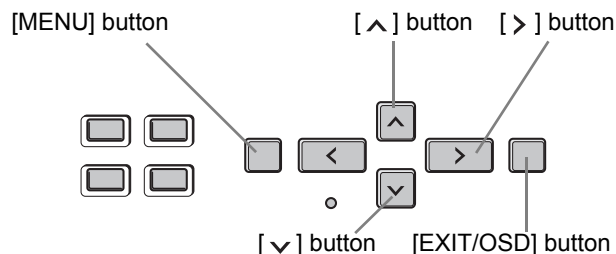
1 Press the [MENU] button twice.

The <MAIN MENU 2> screen appears.

2 Press the [∨] or [∧] button to select "3. BUZZER SET", then press the [〉] button.

The <BUZZER SET> screen is displayed.

```
          <BUZZER SET>
ALARM          :  OFF
DISK FULL      :  ON
DISK ERROR     :  ON
LOCK WARNING   :  ON
KEY IN         :  OFF
NON REC        :  OFF
```

3 Press the [∨] and [∧] buttons to select the desired function, then press the [〉] button.

The setting flashes.

4 Press the [∨] and [∧] buttons to change the setting, then press the [〉] button.
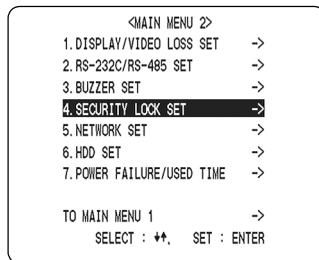
5 Repeat procedures 3 to 4 to set other functions as needed.

6 When you have finished making the settings, press the [EXIT/OSD] button.

The display returns to the normal screen.

<MAIN MENU 2>

```
          <MAIN MENU 2>
  1.DISPLAY/VIDEO LOSS SET    ->
  2.RS-232C/RS-485 SET        ->
  3.BUZZER SET                ->
  4.SECURITY LOCK SET         ->
  5.NETWORK SET               ->
  6.HDD SET                   ->
  7.POWER FAILURE/USED TIME   ->

  TO MAIN MENU 1              ->
        SELECT : ↕,   SET : ENTER
```

You can set passwords that restrict use of the digital video recorder to administrators and designated users, thus preventing unauthorized operation. When the security lock is set, a buzzer sounds when an unauthorized user presses any of the digital video recorder's operation buttons. Be sure to make a note of the set passwords.

Password setting example

Two password types can be set, one for administrators and one for users. The table below gives typical password setting combinations and lists how the digital video recorder operates for each.

| Setting example	Operation
LEVEL PASSWORD (4-8) USE ADMIN 123456AB ON USER AB123456 ON REC CONTROL : ADMIN	All operations are locked until you enter a password.
	Enter the user password to enable playback operations.
	Enter the administrator password to enable all operations.
ADMIN 123456AB ON USER AB123456 ON REC CONTROL : USER	All operations are locked until you enter a password.
	Enter the user password to enable playback and recording operations.
	Enter the administrator password to enable all operations.
ADMIN 123456AB ON USER ------- OFF REC CONTROL : ADMIN	Only playback operations enabled unless password is entered.
	Enter the administrator password to enable all operations.
ADMIN 123456AB ON USER ------- OFF REC CONTROL : USER	Only playback and recording operations enabled unless password is entered.
	Enter the administrator password to enable all operations.
ADMIN ------- OFF USER ------- OFF REC CONTROL : ADMIN	All operations enabled.
ADMIN ------- OFF USER ------- OFF REC CONTROL : USER	All operations enabled.

<SECURITY LOCK SET> screen setting items

```
          <SECURITY LOCK SET>
  LEVEL   PASSWORD(4-8)   USE
  ADMIN      --------      OFF
  USER       --------      OFF
  REC CONTROL        :   ADMIN
```

(1)
(2)
(3)
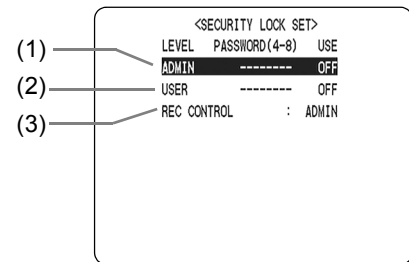
[Settings] (◆ indicates default setting.)

	Item	Setting	Description
(1)	ADMIN	ON	Used to set password for administrators. Also enables password setting.
		◆ OFF	Disables password setting.
(2)	USER	ON	Used to set password for users. Also enables password setting.
		◆ OFF	Disables password setting.
(3)	REC CONTROL	◆ ADMIN	Sets authorization for recording operation to "ADMIN" (administrators).
		USER	Sets authorization for recording operation to "USER" (users).

SETTINGS <MAIN MENU 2>

Setting passwords

[MENU] button   [∧] button   [›] button

[∨] button   [EXIT/OSD] button
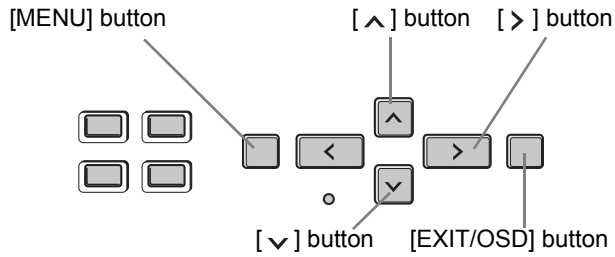
Passwords can be between 4 and 8 alphanumeric characters.
Characters that can be entered in passwords: 0 to 9, A to Z

Example: Setting "123456AB" as a password

1 Press the [MENU] button twice.

The <MAIN MENU 2> screen appears.

2 Press the [∨] or [∧] button to select "4. SECURITY LOCK SET" and press the [›] button.

The <SECURITY LOCK SET> screen is displayed.
The cursor is positioned on "ADMIN".

NOTE ▶

- "LEVEL PASSWORD (4-8) USE" at the top of the screen is the screen title. You cannot move the cursor to this item.

3 Press the [›] button.

The first password entry bar "-" flashes.

ADMIN   -------   OFF

4 Press the [∨] and [∧] buttons to select the character to enter.

Example: Selecting "1"

5 Press the [›] button.

The second password entry bar flashes.

ADMIN   1------   OFF

6 Repeat procedures 4 to 5 to enter the remaining digits ("23456AB" in this example).

ADMIN   123456AB   OFF

NOTE ▶

- **To set a 4-digit password**
  When you have entered four digits and the fifth password entry bar is flashing, press the [›] button.
- If you enter a character incorrectly, press the [‹] button to move back one character. Re-enter the character correctly.

7 When you have finished making the setting, press the [›] button.

The cursor moves to "OFF" (flashing).

8 Press the [∨] and [∧] buttons to select "ON".

ADMIN   123456AB   ON

⚠ CAUTION

- If you select "OFF" for the "ADMIN" setting, you cannot set the "USER" password.

9 When you have finished making the setting, press the [›] button.

The cursor moves to "USER".
If you do not want to set a user password, the password setting is now finished.

```
<SECURITY LOCK SET>
LEVEL  PASSWORD(4-8)    USE
ADMIN      123456AB      ON
USER       --------      OFF
REC CONTROL      :    ADMIN
```

Press the [∨] and [∧] buttons to move the cursor to "REC CONTROL" to set the authorization for recording and playback operation. (→P. 74)

Setting the user password

Example: Setting "AB123456"
Carry out procedures 1 and 2 from P. 73.

3 Press the [∨] and [∧] buttons to move the cursor to "USER".

```
        <SECURITY LOCK SET>
LEVEL   PASSWORD(4-8)   USE
ADMIN       123456AB    ON
USER        --------    OFF
REC CONTROL       :   ADMIN
```

4 Press the [>] button.

The first password entry bar "-" flashes.

Example: A
Press the [∨] and [∧] buttons to select "A".

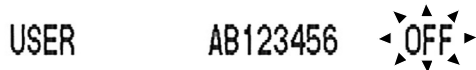USER   A------- OFF

5 Press the [>] button.

The second password entry bar flashes.
Press the [∨] and [∧] buttons to select "B".

Use the same procedures as with the administrator password to set "123456".

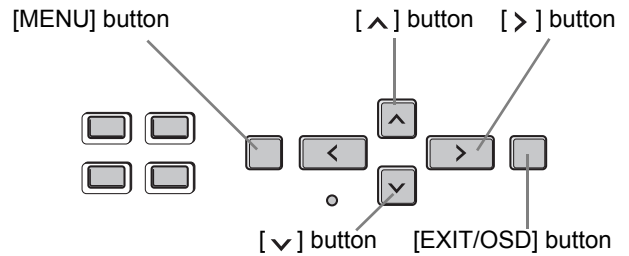### **6** When you have finished making the setting, press the [>] button.

The cursor moves to "OFF" (flashing).

USER   AB123456   OFF

7 Press the [∨] and [∧] buttons to select "ON", then press the [>] button.

The cursor moves to "REC CONTROL".

Setting the authorization for recording and playback operations

[MENU] button   [∧] button   [>] button

[∨] button   [EXIT/OSD] button

Carry out procedures 1 and 2 from P. 73.

3 Press the [∨] and [∧] buttons to move the cursor to "REC CONTROL".

```
        <SECURITY LOCK SET>
LEVEL   PASSWORD(4-8)   USE
ADMIN       123456AB    ON
USER        AB123456    ON
REC CONTROL       :   ADMIN
```
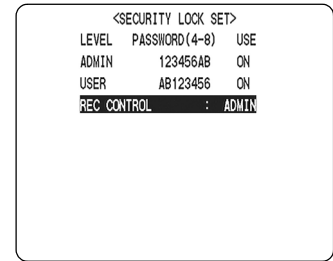
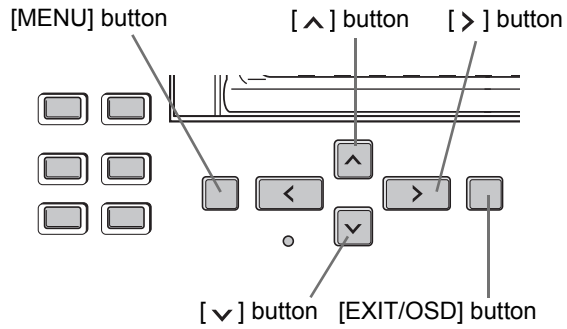### **4** Press the [>] button.

5 Press the [∨] and [∧] buttons to select "ADMIN" or "USER".

The setting is now finished.

6 Press the [EXIT/OSD] button.

The display returns to the normal screen.

SETTINGS <MAIN MENU 2>

Setting the security lock

[MENU] button   [⋀] button   [⟩] button

[⋁] button   [EXIT/OSD] button

1 **With the normal monitoring screen displayed, press the [⋁] button for about 3 seconds.**

A confirmation tone sounds and the security lock is set.

2 **To check the security lock, press any button.**

The password entry screen appears for about 5 seconds.

```
        SECURITY LOCKED !

     PLEASE ENTER YOUR PASSWORD


            ---------


      CHANGE : ↕,   SET : ENTER
```

3 **While the password entry screen is displayed, enter the password.**

Enter the password using the [⋁], [⋀], and [⟩] buttons.

CAUTION

● Enter the password set for administrators or users (such as "123456AB").
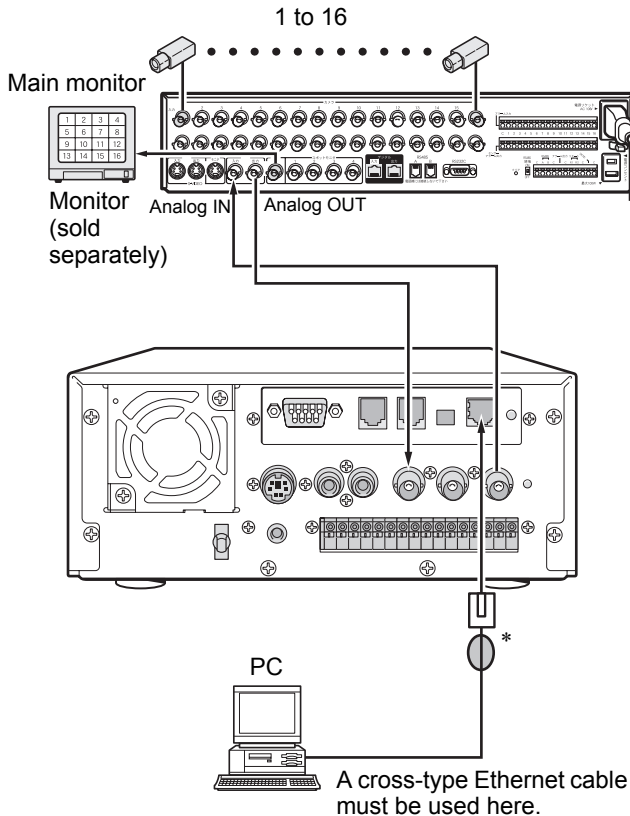
123456AB

4 **Press the [⟩] button.**

The security lock is cancelled and the display returns to the normal screen.
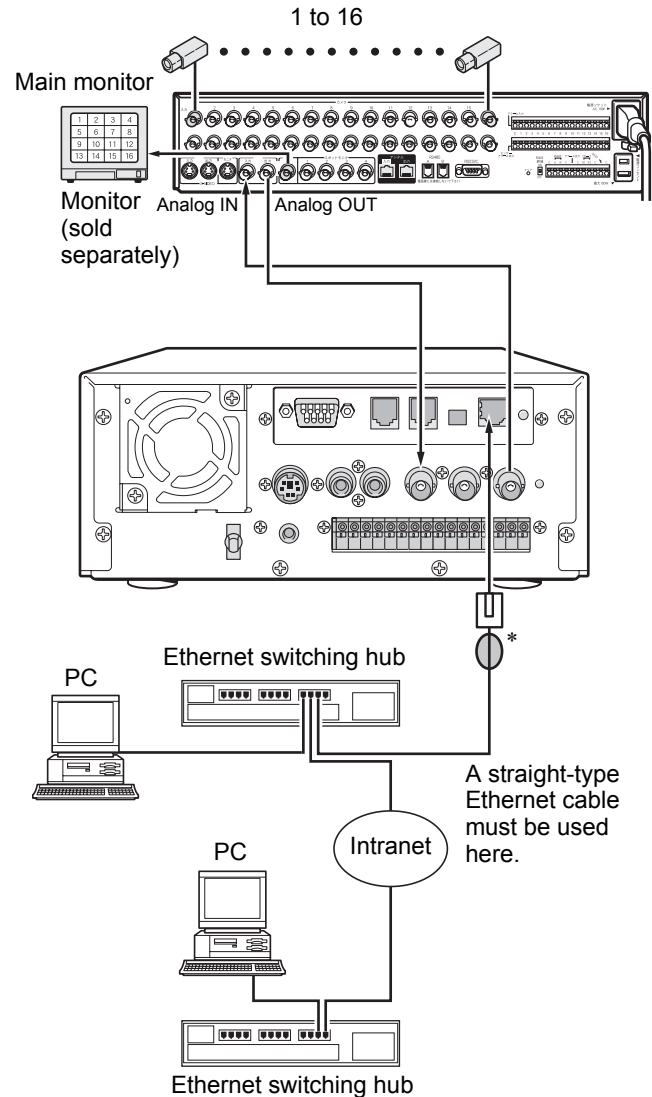
You can make digital video recorder menu settings and monitor images from a PC via a network (LAN).
To do this, a VZU-COM300 option board (sold separately) must be installed.
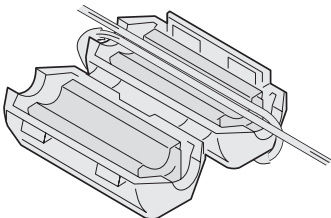
Making network connections

● Connecting to a PC directly
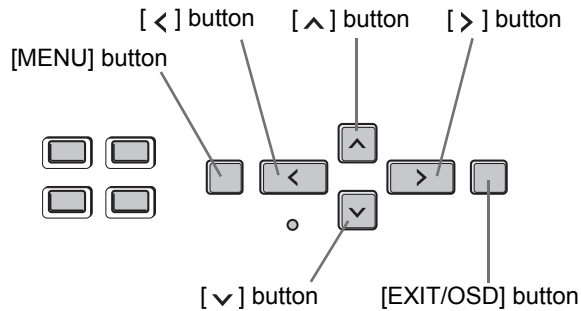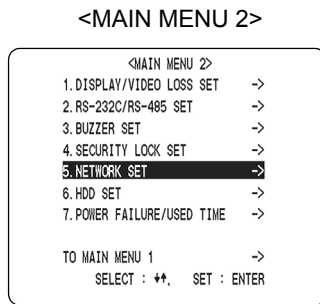(without using an Ethernet hub)

● Connecting to an intranet
(using an Ethernet hub)

1 to 16

Main monitor

Monitor
(sold
separately)   Analog IN   Analog OUT

PC

A cross-type Ethernet cable
must be used here.

1 to 16

Main monitor

Monitor
(sold
separately)   Analog IN   Analog OUT

PC   Ethernet switching hub

PC   Intranet

A straight-type
Ethernet cable
must be used
here.

Ethernet switching hub

* Wrap the LAN connection cable once around the ferrite core provided before attaching it.
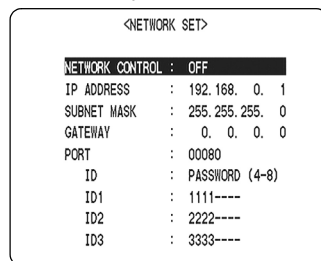(Packaged together with the option RS-485/232C/LAN interface board.)

76   English

SETTINGS <MAIN MENU 2>

<MAIN MENU 2>

```
        <MAIN MENU 2>
1.DISPLAY/VIDEO LOSS SET    ->
2.RS-232C/RS-485 SET        ->
3.BUZZER SET                ->
4.SECURITY LOCK SET         ->
5.NETWORK SET               ->
6.HDD SET                   ->
7.POWER FAILURE/USED TIME   ->

TO MAIN MENU 1              ->
      SELECT : ↕↑,   SET : ENTER
```

[<] button   [∧] button   [>] button

[MENU] button

[∨] button   [EXIT/OSD] button

Making network settings

1 Press the [MENU] button twice.

The <MAIN MENU 2> screen appears.
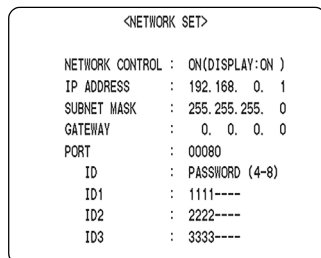
2 Press the [∨] or [∧] button to select "5. NETWORK SET", then press the [>] button.

The <NETWORK SET> screen is displayed.

```
            <NETWORK SET>

NETWORK CONTROL :  OFF

IP ADDRESS      :  192.168.  0.  1
SUBNET MASK     :  255.255.255.  0
GATEWAY         :    0.  0.  0.  0
PORT            :  00080
   ID           :  PASSWORD (4-8)
   ID1          :  1111----
   ID2          :  2222----
   ID3          :  3333----
```

3 Move the cursor to "NETWORK CONTROL" and press the [∨] and [∧] buttons to set "ON", then press the [>] button.
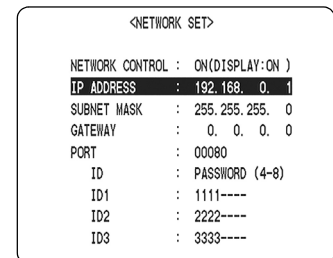
(Example: ON)

```
            <NETWORK SET>

NETWORK CONTROL :  ON(DISPLAY:ON )
IP ADDRESS      :  192.168.  0.  1
SUBNET MASK     :  255.255.255.  0
GATEWAY         :    0.  0.  0.  0
PORT            :  00080
   ID           :  PASSWORD (4-8)
   ID1          :  1111----
   ID2          :  2222----
   ID3          :  3333----
```

[Settings] (◆ indicates default setting.)

Setting	Description
◆ OFF	Prevents operation of this unit via the network to which it is connected.

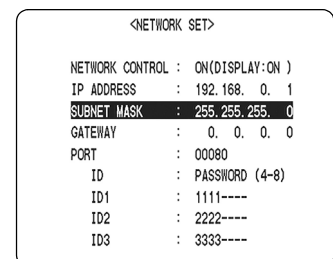| Setting	Description
ON (DISPLAY: ON)	When connected to a network, "NETWORK CONTROL" will normally be displayed on the unit's monitor output. When playback is performed via the network, this will also be displayed on the unit's monitor. Operation via the unit will not be possible while network connected. However, it will be possible to terminate the network connection by pressing and holding the [EXIT/OSD] button for at least 3 seconds.
ON (DISPLAY: OFF)	When connected to a network, "NETWORK CONTROL" is not displayed on the unit's monitor output. Even if playback is performed via the network, the unit's monitor output will be normally displayed for monitoring. The unit's PLAY/STOP indicator will not light up even during playback. (Recording will be possible.) Operation via the unit will not be possible while network connected. However, it will be possible to terminate the network connection by pressing and holding the [EXIT/OSD] button for at least 3 seconds.

4 Move the cursor to "IP ADDRESS" and press the [>] button, then press the [∨], [∧], [>], and [<] buttons to change the setting.

(Example: 192.168.0.1)

```
            <NETWORK SET>

NETWORK CONTROL :  ON(DISPLAY:ON )
IP ADDRESS      :  192.168.  0.  1
SUBNET MASK     :  255.255.255.  0
GATEWAY         :    0.  0.  0.  0
PORT            :  00080
   ID           :  PASSWORD (4-8)
   ID1          :  1111----
   ID2          :  2222----
   ID3          :  3333----
```

5 Move the cursor to "SUBNET MASK" and press the [>] button, then press the [∨], [∧], [>], and [<] buttons to change the setting.

(Example: 255.255.255.0)

```
            <NETWORK SET>

NETWORK CONTROL :  ON(DISPLAY:ON )
IP ADDRESS      :  192.168.  0.  1
SUBNET MASK     :  255.255.255.  0
GATEWAY         :    0.  0.  0.  0
PORT            :  00080
   ID           :  PASSWORD (4-8)
   ID1          :  1111----
   ID2          :  2222----
   ID3          :  3333----
```

6 **Move the cursor to "GATEWAY" and press the [>] button, then press the [∨], [∧], [>], and [<] buttons to change the setting.**

(Example: 0.0.0.0)

```
            <NETWORK SET>

NETWORK CONTROL :  ON(DISPLAY:ON )
IP ADDRESS      :  192.168.  0.  1
SUBNET MASK     :  255.255.255.  0
GATEWAY         :    0.  0.  0.  0
PORT            :  00080
   ID           :  PASSWORD (4-8)
   ID1          :  1111----
   ID2          :  2222----
   ID3          :  3333----
```

7 **Move the cursor to "PORT" and press the [>] button, then press the [∨], [∧], [>], and [<] buttons to change the setting.**

(Example: 00080)

```
            <NETWORK SET>

NETWORK CONTROL :  ON(DISPLAY:ON )
IP ADDRESS      :  192.168.  0.  1
SUBNET MASK     :  255.255.255.  0
GATEWAY         :    0.  0.  0.  0
PORT            :  00080
   ID           :  PASSWORD (4-8)
   ID1          :  1111----
   ID2          :  2222----
   ID3          :  3333----
```

> **CAUTION**
>
> When connecting the digital video recorder to a network, check the following settings with the network administrator.
> ● IP address
> ● Subnet mask
> ● Gateway
> ● Port number

Password setting

Three access levels are setup for network connection, and a password is set for each. Passwords can be between 4 and 8 alphanumeric characters.

> **CAUTION**
>
> ● "ID" or "PASSWORD (4-8)" at the top of the screen is the screen title. You cannot move the cursor to this item.

Example: Setting "AB123456" to "ID1"

1 **Press the [∨] or [∧] button to select "ID1".**

```
SUBNET MASK     :  255.255.255.  0
GATEWAY         :    0.  0.  0.  0
PORT            :  00080
   ID           :  PASSWORD (4-8)
   ID1          :  1111----
   ID2          :  2222----
   ID3          :  3333----
```

[Settings]

Setting	Description
ID1	Allows images to be monitored via the network.
ID2	Allows images to be monitored and the playback or search/playback of recorded images via the network.
ID3	Allows all of this unit's operations and settings to be performed.

2 **Press the [>] button.**

The first password entry item "1" flashes.
Characters that can be entered in passwords: 0 to 9, A to Z

3 **Press the [∨], [∧], [>], and [<] buttons to input the password.**

(1) Press the [∨] or [∧] button to select "A", then press the [>] button.
(2) The second entry item "1" flashes. Press the [∨] or [∧] button to select "B", then press the [>] button.
(3) The third entry item "1" flashes. Use the above procedure to select "AB123456".

```
            <NETWORK SET>

NETWORK CONTROL :  ON(DISPLAY:ON )
IP ADDRESS      :  192.168.  0.  1
SUBNET MASK     :  255.255.255.  0
GATEWAY         :    0.  0.  0.  0
PORT            :  00080
   ID           :  PASSWORD (4-8)
   ID1          :  AB123456
   ID2          :  2222----
   ID3          :  3333----
```

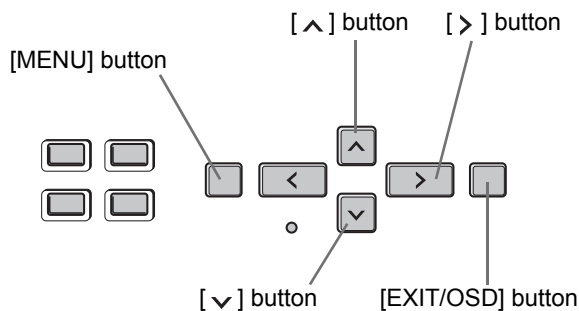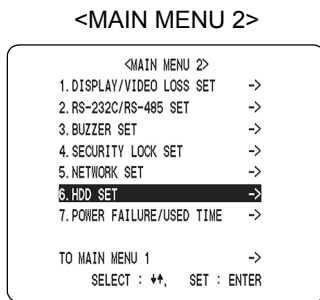**4** **When you have finished making the setting, press the [>] button.**

5 **Where necessary, use the same procedure to set the "ID2" and "ID3" passwords.**

```
IP ADDRESS      :  192.168.  0.  1
SUBNET MASK     :  255.255.255.  0
GATEWAY         :    0.  0.  0.  0
PORT            :  00080
   ID           :  PASSWORD (4-8)
   ID1          :  AB123456
   ID2          :  2222----
   ID3          :  3333----
```

6 **Press the [EXIT/OSD] button.**

The display returns to the normal screen.

SETTINGS <MAIN MENU 2>

6 HDD SET

<MAIN MENU 2>

```
        <MAIN MENU 2>
1.DISPLAY/VIDEO LOSS SET    ->
2.RS-232C/RS-485 SET        ->
3.BUZZER SET                ->
4.SECURITY LOCK SET         ->
5.NETWORK SET               ->
6.HDD SET                   ->
7.POWER FAILURE/USED TIME   ->

TO MAIN MENU 1              ->
     SELECT : ++,   SET : ENTER
```

[MENU] button   [∧] button   [>] button

[∨] button   [EXIT/OSD] button

This section describes how to initialize the hard disk.

Initializing the hard disk

1 Press the [MENU] button twice.

The <MAIN MENU 2> screen appears.

2 Press the [∨] or [∧] button to select "6. HDD SET" and press the [>] button.

The <HDD SET> screen appears.
The cursor is positioned on "DISK INITIALIZE".

```
            <HDD SET>
DISK1              :  81GB

      DISK INITIALIZE      ->
CAUTION : ALL RECORDING WILL BE ERASED!
```
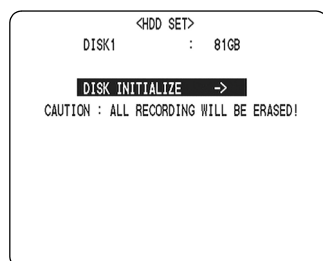
3 Press the [>] button.

The <WARNING> screen is displayed, with "NO" flashing.

```
              <WARNING>

THIS CHANGE WILL INITIALIZE THE DISK.
    ALL RECORDING WILL BE ERASED.
          ARE YOU SURE ?
               NO

       CHANGE : ++,   SET : ENTER
```

4 Press the [∨] and [∧] buttons to select "YES" and press the [>] button.

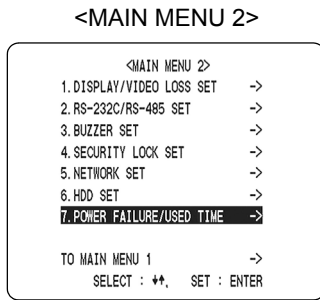The "HDD INITIALIZING!" screen is displayed, and the hard disk is initialized.
When the process has finished, the display returns to the menu screen.

```
         HDD INITIALIZING !
```

5 Press the [EXIT/OSD] button.

The display returns to the normal screen.

<MAIN MENU 2>

```
         <MAIN MENU 2>
1. DISPLAY/VIDEO LOSS SET    ->
2. RS-232C/RS-485 SET        ->
3. BUZZER SET                ->
4. SECURITY LOCK SET         ->
5. NETWORK SET               ->
6. HDD SET                   ->
7. POWER FAILURE/USED TIME   ->

TO MAIN MENU 1               ->
     SELECT : ↕↑,   SET : ENTER
```
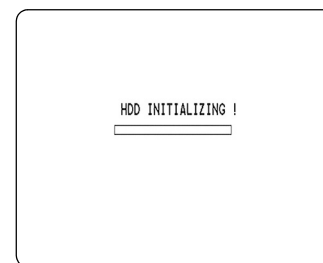
[MENU] button

[∧] button   [>] button

[∨] button   [EXIT/OSD] button
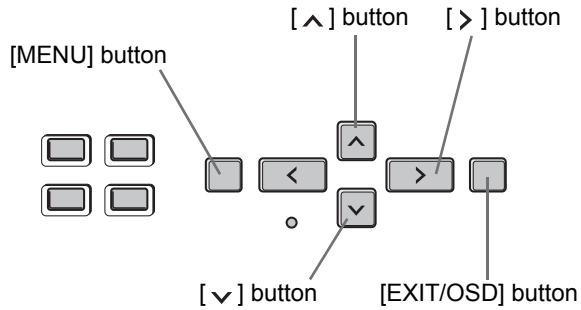
You can check the date/time of power failures and the amount of hard disk operation time.

1 Press the [MENU] button twice.

The <MAIN MENU 2> screen is displayed.

2 Press the [∨] or [∧] button to select "7. POWER FAILURE/USED TIME" and press the [>] button.

The <POWER FAILURE/USED TIME> screen is displayed.
Use this screen to check the date/time of power failures and the amount of hard disk operation time.

```
           <POWER FAILURE/USED TIME>
(1) ——  POWER FAILURE
           #018   FAILURE   -----   --:--
(2) ——         RECOVER   -----   --:--

        USED TIME
(3) ——         DISK1 USE :   00151H
(4) ——         POWER     :   00157H
(5) —— FIRMWARE :  MAIN  1.13-53  /  SUB  1.04-02
```
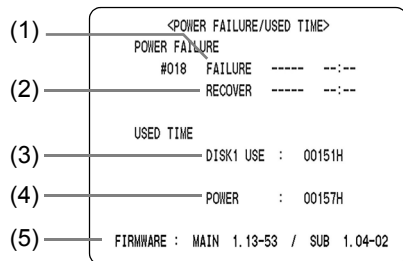
(1) FAILURE:
Displays the date/time of the last power failure.
The number on the left is the number of power failures.
(example: #018) Resets to "000" after exceeding "999".

(2) RECOVER:
Displays the most-recent time at which the power was restored.

(3) DISK1 USE:
Displays the total amount of disk 1 operation time.

(4) POWER:
Displays the amount of power ON time for the digital video recorder.

(5) FIRMWARE:
Displays the current version of firmware.

3 Press the [EXIT/OSD] button.

The display returns to the normal screen.

SETTINGS <MAIN MENU 2>

RS-232C
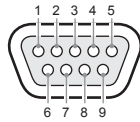
Pin No.	Signal	Operation	Signal direction
1	–	–	–
2	RXD	Reception	PC → Unit
3	TXD	Transmission	Unit → PC
4	–	–	–
5	GND	Ground	–
6	–	–	–
7	RTS	Transmission request	Unit → PC
8	–	–	–
9	–	–	–

Data format

Mode	Asynchronous
Character length	8 bits
Data transmission speed	2400, 4800, 9600, 19200 bps
Parity check	None
Stop bit	1

Only the data transfer speed can be set. (→P. 69)

Communication protocol

Communication is carried out in units of 1 byte. After the PC has transmitted a single byte, it waits for a response from the unit before sending the next byte.
An ON (F6) command is sent as the start command, and the unit will continue to accept commands until an OFF (F7) command is sent as the end command. Whenever the unit receives a command, it returns an ACK (0A).

RS-485

When using RJ-11 connector
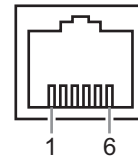
Pin No.	Connector A signal	Connector B signal
1	Not used	Not used
2	Not used	Not used
3	A	B
4	B	A
5	Not used	Not used
6	Not used	Not used

A: Non-inverting driver output, non-inverting receiver input
B: Inverting driver output, inverting receiver input

Communication wire: 2-core wire

Communication system: Half duplex

Data format

Mode	Asynchronous
Character length	8 bits
Data transmission speed	2400, 4800, 9600, 19200 bps
Parity check	None
Start bit	1
Stop bit	1

To set the data transmission speed, address and termination switch, see "Settings for RS-232C and RS-485" (→P. 69).

Communication protocol

A proprietary Sanyo protocol (SSP: Security Serial Protocol) is used. Use of a Sanyo system controller is recommended.
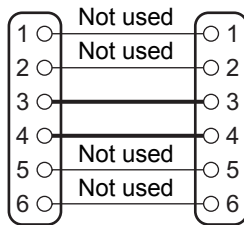
Connection

Sanyo digital video recorders support both straight type and crossed type connection cables.

When using a straight type connection cable, connect the RS-485 connector's pin A to the pin A socket, or pin B to the pin B socket.
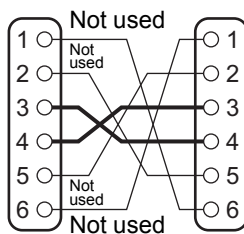
When using a crossed type connection cable, connect the RS-485 connector's pin A to the pin B socket, or pin B to the pin A socket.

Cable types

Straight type:

Crossed type:
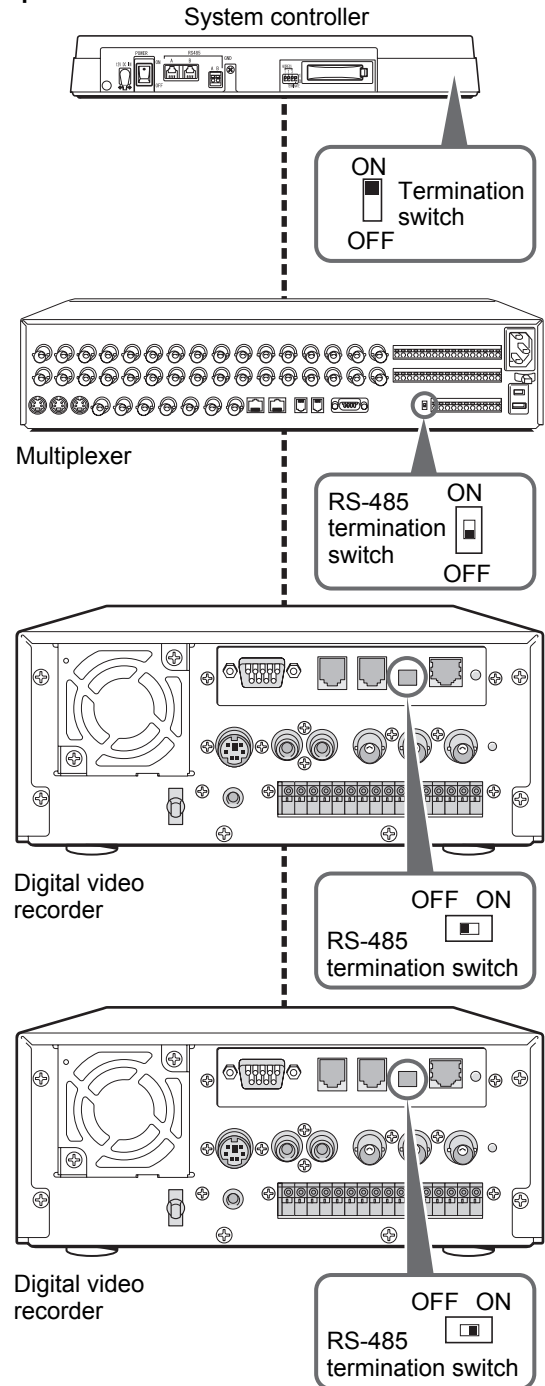

Setting the RS-485 termination switch

Termination settings

When connecting multiple devices, you must make termination settings on both end devices.

● Set the RS-485 termination switch of the end device to ON.

● Be sure to set all non-termination devices (i.e., devices other than the first and last devices) to OFF.

⚠ CAUTION

● If you do not make the correct termination settings, data will be reflected at both ends, affecting other data and making the data transmitted to each device incorrect.

Example:

System controller

ON ▣ Termination switch OFF

Multiplexer

RS-485 termination switch ON ▣ OFF

Digital video recorder

OFF ON ▣ RS-485 termination switch

Digital video recorder

OFF ON ▣ RS-485 termination switch

INTERFACE SPECIFICATIONS

Commands

The received data/transmitted data (RXD/TXD) signal diagrams below are given from the point of view of the recorder.

> ⓘ **CAUTION**
>
> ● Some commands consist only of a single byte.
> The RXD/TXD signal diagrams for single-byte commands are as shown below.

RXD		
TXD		0A

In the descriptions below, the RXD/TXD signal diagrams for commands of a single byte other than return codes have been omitted.

Precaution for RS-485 use

● When a group number is set, the command will not execute if it does not match the group number.

Commands for recorder operation

The commands below are 1-byte commands. The recorder returns ACK (0AH) for these commands. Confirm that ACK has been received before sending the next command.

■ PLAY (3AH)

● Starts playback.

■ STILL (4FH)

● If sent during playback, starts still mode.

■ PLAY/STOP (3FH)

● Stops the recorder.

■ ALARM ▶▶│ (ABH)

● If sent during playback of alarm image, playback skips to the next alarm.

■ ALARM │◀◀ (ACH)

● If sent during playback of alarm image, playback skips to the previous alarm.

■ CHANNEL (8CH)

● If sent during playback, displays the channel selection screen.
● If sent while the channel selection screen is displayed, switches to the all-channel display.

■ COPY (8DH)

● Copies the image to the backup area or Compact Flash card.

■ SEARCH (4AH)

● If sent while the recorder is stopped, the <SEARCH> screen is displayed.

■ TIMER ON/OFF (60H)

● Sets timer recording to "ON" (timer recording standby) or "OFF" (timer recording canceled).

■ SECURITY LOCK ON (69H)

● Sets the security lock.

■ REC REQUEST (FAH)

● Send this command immediately before sending the REC (CAH) command.

■ REC (CAH)

● Starts recording.
● If sent during single-image recording mode, records the set number of frames (fields).
● Send this command after sending the REC REQUEST (FAH) command, and confirming that the recorder has returned the ACK response.

RXD	FA		CA	
TXD		0A		0A

Use the STATUS SENSE (D7H) command to check the state of the recorder.

■ REC STOP (CFH)

● Stops recording.

■ CHANGE DISK (7DH)

● The HDD's power must be turned OFF before it can be removed. (Removal is not possible with the power ON.)

Commands for setting the recorder

■ CLOCK ADJUST (E0H)

- If sent with the recorder stopped, resets the minutes and seconds of the clock display to 00. For example, if sent between 13:30:00 and 14:29:59, sets the clock to 14:00:00.

On-screen commands

■ MENU (74H)

- If sent with the recorder stopped, displays the main menu.
- If sent with a sub-menu displayed, toggles the menu screen each time it is sent.

■ ＜/CLEAR (53H)

- If sent while a menu screen is displayed, sets the setting item selection or value.
- If sent while the main menu is displayed, switches to the selected sub-menu.
- If sent while a data display is on screen, moves the display to the left. No operation is performed if sent during recording.
- Starts rewinding.
- If sent during playback, starts rewind playback.
- If sent during still mode, rewinds the image by one frame (field).

■ ＞/ENTER (63H)

- If sent while a menu screen is displayed, sets the setting item selection or value.
- If sent while the main menu is displayed, switches to the selected sub-menu.
- If sent while a data display is on screen, moves the display to the right. No operation is performed if sent during recording.
- Starts fast-forwarding.
- If sent during playback, starts fast-forward playback.
- If sent during still mode, advances the image by one frame (field).

■ SHIFT +/∧ (65H)

- If sent while a menu screen is displayed, selects the setting item, changes the setting, or changes (increases) the set value.

■ SHIFT -/∨ (66H)

- If sent while a menu screen is displayed, selects the setting item, changes the setting, or changes (decreases) the set value.

■ OSD/EXIT (8EH)

- If sent while the main menu or a sub-menu is displayed, exits menu settings.
- If sent during recording or playback, changes/hides the operation display position.

■ MENU RESET (E1H)

- If a menu screen is displayed, resets (initializes) that menu's settings.

Commands for acquiring information

When a command for acquiring information is sent, the recorder returns the information (data) for the command.
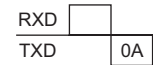
■ STATUS SENSE (D7H)

- Returns the recorder's operating status in 5 bytes. (→P. 85)

Return codes

■ ACK (0AH)

- Returned when the recorder received a valid command.

■ NAK (0BH)

- Returned when the recorder received an undefined (or non-functional) command.

■ T/D SEARCH (B5H) for RS-232C only

- Enter year, month, date, hour, minute, then run T/D SEARCH with (40H).

Bit assignments in STATUS SENSE (D7H) data bytes

Byte 1

Bit		When bit is 1
0	00 : REC STOP	
1	01 : NORMAL REC 10 : TIMER REC 11 : TIMER ST-BY	
2	NORMAL REC FULL	Recording area is full.
3	00 : STOP	
4	01 : PRE REC 10 : ALARM REC 11 : Reserved	
5	ALARM REC FULL	Alarm recording area is full.
6	00 : PLAY STOP	
7	01 : STILL 10 : PLAY 11 : MENU	

Byte 2

Bit		When bit is 1
0		
1	Speed (00-0FH)	
2		
3		
4	Forward direction	The playback direction is forward. (when 00 is set the direction is reverse.)
5	Undefined	Always 0
6	PB mode 00: Normal	
7	01: ALARM 10: Save 11: Undefined	

Byte 3

Bit		When bit is 1
0		
1	Selection input number	
2		
3		
4	Undefined	Always 0
5	Undefined	Always 0
6	Undefined	Always 0
7	CH selected	Channel is selected.

Byte 4

Bit		When bit is 1
0	Undefined	Always 0
1	Undefined	Always 0
2	Undefined	Always 0
3	Undefined	Always 0
4	Undefined	Always 0
5	Undefined	Always 0
6	Undefined	Always 0
7	Undefined	Always 0

Byte 5

Bit		When bit is 1
0	Undefined	Always 0
1	Undefined	Always 0
2	Undefined	Always 0
3	Undefined	Always 0
4	Undefined	Always 0
5	Undefined	Always 0
6	Undefined	Always 0
7	Undefined	Always 0

Commands (RS-485 only)

■ GROUP SET (6CH)

● Sent when grouping (appending group numbers). Send the 2-byte group number after confirming the ACK (0AH) signal has been sent from the recorder.

Example: Setting group number 5

```
RXD  6C      20      00
TXD      0A      0A      0A
```
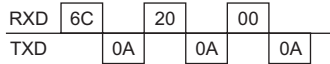
■ GROUP CHECK (6DH)

● Returns the group number.

Example: Group number 2

```
RXD  6D
TXD      04      00
```
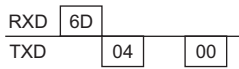
■ GROUP CLEAR (6EH)

● Clears the group number. Send the 2-byte group number after confirming the ACK (0AH) signal has been sent from the recorder.

Example: Group number 8

```
RXD  6E      00      01
TXD      0A      0A      0A
```
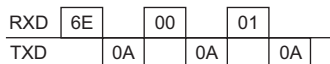
■ STATUS LOG 1 (BFH)

● A header containing mode change information, returned from the recorder to the system controller when the recorder is operated with the RS-485 interface in use. (→P. 87)

■ MENU UPLOAD (D8H)

● Sends the recorder's menu settings to the controller (and saves them in the controller).

```
RXD  D8
TXD      0A                      40
```

■ MENU DOWNLOAD (E8H)

● Sends the menu settings saved in the controller to the recorder, replacing the existing settings.

```
RXD  E8                      40
TXD      0A      0A      0A      0A
```

■ CLOCK DOWNLOAD (E9H)

● Sets the time in the recorder, with time information from the controller.

```
RXD  E9              40
TXD
```
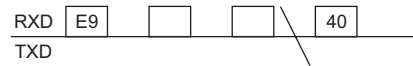
■ RS-485 SEND START (FDH)

● Sent before the command is sent. Waits for ACK (0AH) confirmation.

■ RS-485 RCV CMF (FEH)

● Sent after receiving a command. Waits for RS-485 SEND START (FDH).

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INTERFACE
SPECIFICATIONS

Return codes

When the recorder is operated with the RS-485 interface in use, it sends a 2-byte code indicating its setting.

RXD

TXD | BF | |
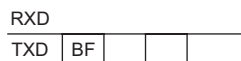
First byte: Header (BEH or BFH)
Second byte: Mode change information

Bit assignments in second byte

When first byte is BFH
Bits 0, 1, 2, and 3 indicate the status.

0,0,0,0	No change
1,0,0,0	Playback has stopped.
0,1,0,0	Still image is displayed.
1,1,0,0	Slow playback has started.
0,0,1,0	Reverse slow playback has started.
1,0,1,0	Playback has started.
0,1,1,0	Reverse playback has started.
1,1,1,0	Fast-forwarding has started.
0,0,0,1	Rewinding has started.
1,0,0,1	Normal recording has stopped.
0,1,0,1	Normal recording has started.
1,1,0,1	Timer recording has started.
0,0,1,1	Preparing to start timer recording.
1,0,1,1	Alarm recording has stopped.
0,1,1,1	Alarm recording has started.
1,1,1,1	Undefined

Bits 5 and 6: Indicate start and end of alarm recording.

0,0	Normal
0,1	Alarm recording has started.
1,0	Alarm recording has ended.

Bit 7: Indicates warning status.

1	Problem has occurred (recording failure, mechanical problem or clog).
0	Normal

Command table

The table below shows the commands supported by the digital video recorder.
If this unit has no function corresponding to a command, no action will be taken when such a command is received.

Left digit / Right digit	0	1	2	3	4	5	6	7
0					Run T/D SEARCH		TIMER ON/OFF	
1								
2								
3						〈	〉	
4								MENU
5							∧	
6							∨	
7								
8								
9							SECURITY LOCK ON	
A	ACK			PLAY	SEARCH (DVR)			
B	NAK							
C							GROUP SET	
D							GROUP CHECK	CHANGE DISK
E							GROUP CLEAR	
F				PLAY/STOP	STILL			

Left digit / Right digit	8	9	A	B	C	D	E	F
0							CLOCK ADJUST	
1							MENU RESET	
2								
3								
4								
5				T/D SEARCH				
6								
7						STATUS SENSE		
8						MENU UPLOAD	MENU DOWNLOAD	
9							CLOCK DOWNLOAD	
A					REC			REC REQUEST
B			ALARM ▶▶❘					
C	CHANNEL		ALARM ❘◀◀					
D	COPY							RS-485 SEND START
E	OSD/EXIT							RS-485 RCV CMF.
F				STATUS LOG1	REC STOP			

Note: The ▭ command is only used during RS-485 control.

Manual for
Remote Operation
by Network Connection
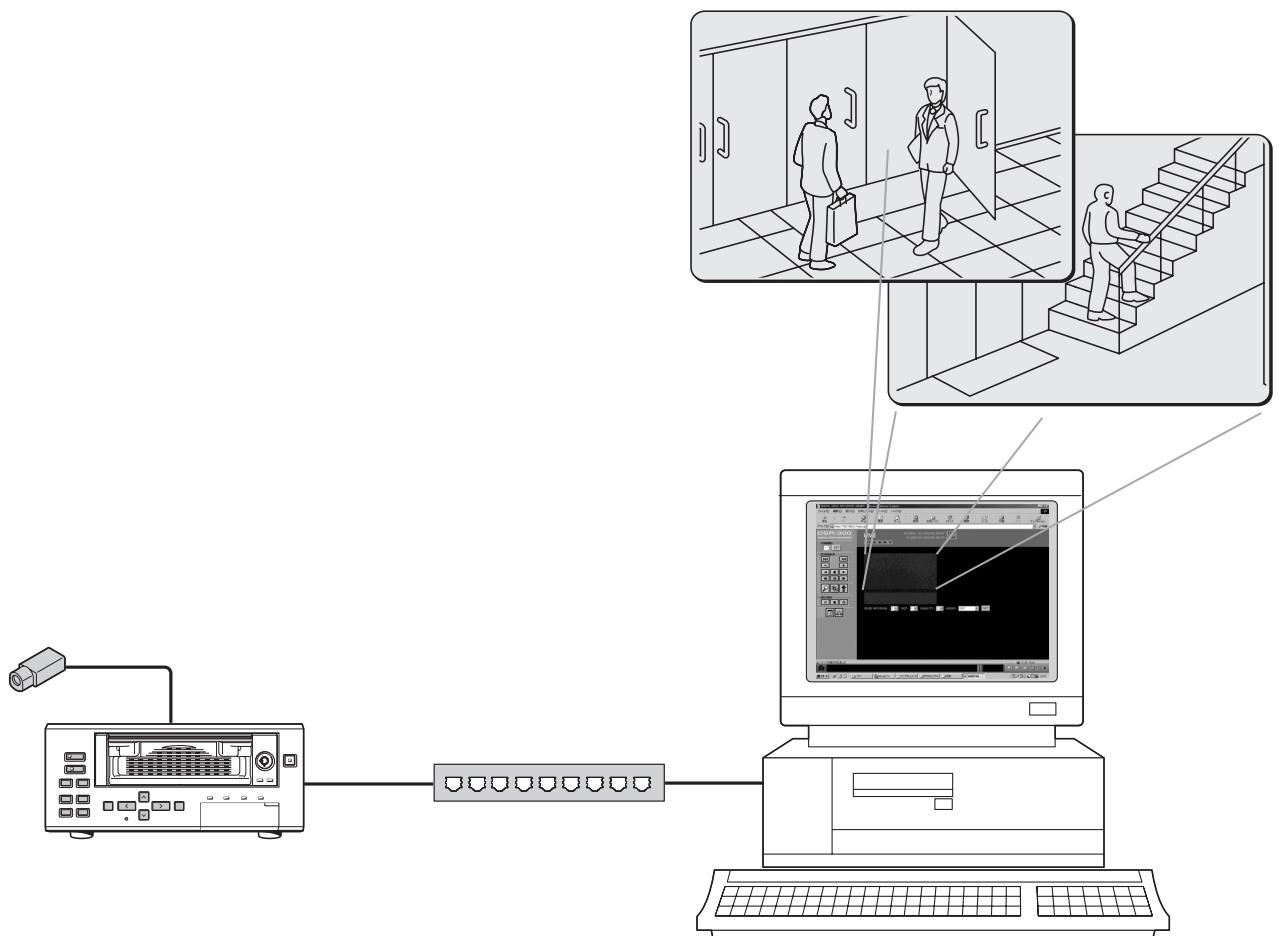
PC control (i.e., remote control) will be possible when this unit is connected to a network.

Camera

DVR

Switching hub   Switching hub

1   2   3   4
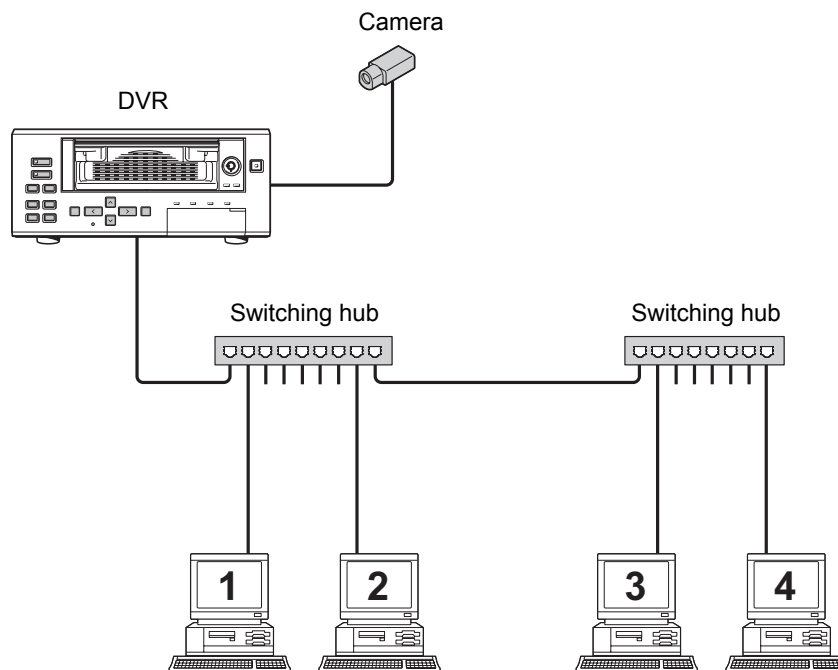
Operations possible with PC control

● Menu settings, recording, playback, and other similar operations will be possible from the PC screen.
● Up to a maximum of four PCs can be simultaneously connected to a single digital video recorder (or DVR).
  ● Users with user level ID1: 3 PCs
  ● Users with user level ID2 or ID3: 1 PC
● Control of the DVR can be freely switched from the unit itself to the PC and vice versa. Note that operation of the unit will not be affected by simply connecting a cable.
● In order to provide security for computer control, three types of password are set in accordance with the different user levels, and this ensures that three different levels of restrictions can be introduced for operations. (→P. 110)

Network settings

● When this unit is being used while connected to a network, network settings must be made on the unit itself. See "Making network settings" (→P. 77) for more details.
● TCP/IP settings must be made on the connected PCs and in accordance with the operating system (OS) being used on each.

! CAUTION

● When a pre-existing network is being used, a check must be carried out by that network's administrator to confirm that IP addresses do not coincide with other IP addresses already in use.

Saving and playing back sound

● To connect to the network and download images and audio, or to save live images or playback images on a PC, an exclusive plugin is necessary.
  Run plugin\Active AllInstall1.1.0\setup.exe on the supplied CD-ROM.
● The application DVR Viewer will be needed in order to playback images and audio downloaded to a PC, CompactFlash card, CD-R, or another similar storage medium. Version 1.4.7 of this application can be installed from the CD-ROM supplied with this digital video recorder. In addition, DVR Viewer may also be downloaded from the Sanyo website.
  Sanyo website URL: http://www.sanyosecurity.com

Minimum system requirements

Operating system: Windows 98/98SE/Me/2000/XP
Browser: Internet Explorer Ver. 5.0 or later
Video: 65,000 colors, resolution 800 x 600 dpi or higher

Audio playback requirements

DirectX or compatible sound card
Speaker

For Windows XP

The following example applies to Windows XP.
Transmission control protocol/Internet protocol (TCP/IP) is the standard protocol used for Internet and Intranet. If this unit is to be used when connected to a network, specify a TCP/IP to suit each operating system for the computer that is used for the settings.

1 **Click the [Network and Internet Connections] icon in the [Control Panel].**

The [Network and Internet Connections] window is displayed.

2 **Click [Network Connections].**

The [Network Connections] window is displayed, and the settings for the LAN card (Ethernet adapter) being used will appear in the [LAN or High-Speed Internet] column.

3 **Right-click on the LAN card (Ethernet adapter) being used, and then select [Properties] from the pop-up menu.**

The [General] tab window in the [Local Area Connection Properties] window is displayed.

4 **Check that [Internet Protocol (TCP/IP)] is selected in the list of components used by the Ethernet board that appears in the [This connection uses the following items:] box.**

If [Internet Protocol (TCP/IP)] is not selected, select it.

5 **Click [Properties].**

The [General] tab window in the [Internet Protocol (TCP/IP) Properties] window is displayed.

6 **Select [Use the following IP address:] and then type in the IP address and the subnet mask.**
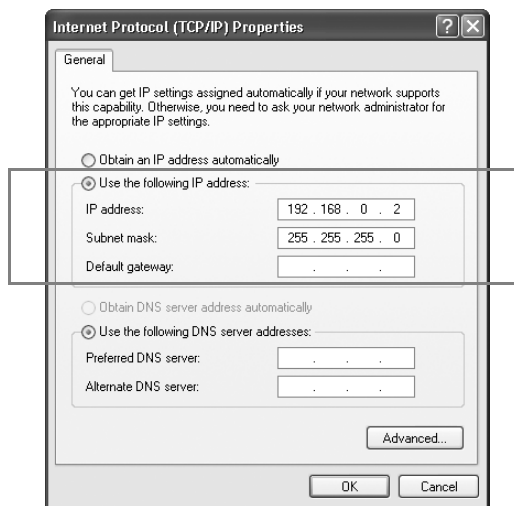
7 **Check the settings, and then click [OK].**

The display will return to the [Local Area Connection Properties] window.

8 **Click [OK].**

This completes the TCP/IP settings.

⚠ **CAUTION**
● Ask the network administrator for details on DNS and gateway address settings.

NETWORK
CONTROL

Controlling from a PC

1 Launch the PC's web browser.

Internet Explorer versions 5.0 and later are supported.
In terms of OS, Windows 98, 98SE, Me, 2000, and XP are supported.

! CAUTION

● If the Java Script run-time error message is displayed while Internet Explorer is being used, modify that application's settings as follows:
(1) Select menus in the sequence [Tools] → [Internet Options] → [Advanced].
(2) Set the [Browsing] checkbox as follows.
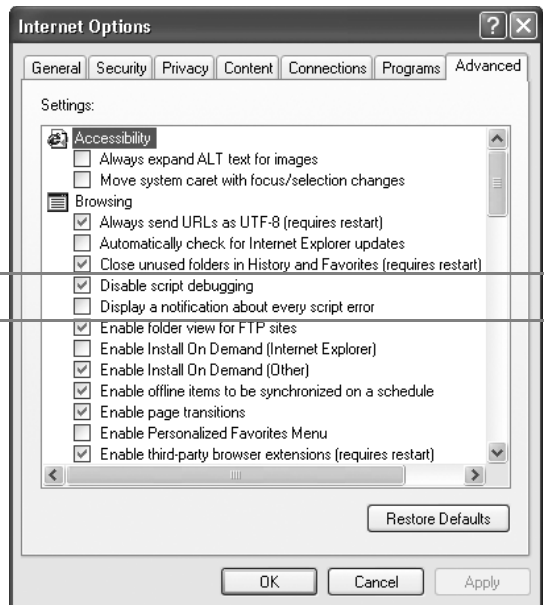
2 Enter the URL.

Enter the unit's URL in the browser's address bar and then press [Enter]. (Note that the URL should contain the IP address specified using the unit's network settings.)
To start, enter "http://192.168.0.1/" as the default setting.

! CAUTION

● If a value other than "80" is set as the default port value, enter a colon (:) and then the port number after the IP address.
For example, if the port number was set as "81", you should enter
http://192.168.0.1:81/
● If no web browser is installed on the PC, Internet Explorer must be installed before proceeding.

3 Enter a password (for verification purposes).

Enter a [User name] and a verification-use [Password] on the [Connect to 192.168.0.1] screen, and then click [OK]. If you entered an incorrect password, the password entry screen will appear once again and you will be prompted to re-input the password.

● Passwords should be setup in advance for the hardware environment's different user levels. At the time of purchase, the password settings (i.e., user name and password) will be as described on P. 110.
● If you save the [User name] and [Password] that have been entered, verification will be carried out automatically on subsequent occasions, and they will not need to be entered again. Note, however, that it may not be possible to save a password other than that used for the default connection.
● Up to four PCs can be connected simultaneously to a single DVR. Note, however, that users with user level ID2 or ID3 are restricted to use of one PC.

! CAUTION

● When four PCs are connected and access is made from a different PC using the highest user level, the most-recent user of a lower level to have accessed the unit will be automatically disconnected and priority will be given to the upper-level user.
An error message will appear on the disconnected user's PC. (→P. 95)
● When [Cancel] is clicked after repeated input of an incorrect password, the authentication error message will be displayed.
● Even if computer control is being carried out, clicking a button for which you do not have authorization will result in the password input screen being displayed to verify allocation of the required user level.

4 Entering the operation screen

(1) The following screen will be displayed when password
verification has been completed successfully.

(2) Select the language and click [OK]. The operation
screen will be displayed and computer control will now
be possible.

⚠ CAUTION

● Connection will not be possible when a menu screen is
being displayed on the DVR unit or when playback-
related operations are being carried out. In such a case,
cancel the menu screen selection or stop the playback
operation before attempting to remake connection.
● Connection may not be possible via a proxy server. In
such a case, cancel the proxy settings.

NETWORK
CONTROL

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Controlling from the unit

Whenever the ⊻ button on the PC's operation screen is clicked, access will be cancelled and control rights will switch back to the unit.

▶ **NOTE** ▶

● To forcibly cancel PC access from the unit, press and hold the [EXIT/OSD] button for at least 2 seconds.
● Access from the PC will not be permitted for a period of 10 seconds after access has been canceled.
● The access connection will also be cancelled whenever communication with the PC is not possible for a period of about 2 minutes or more, and control rights will switch back to the unit in such a case.

Messages displayed when connected

Messages related to the switching of control or the network connection condition may be displayed on-screen at any time.

Display on the unit

1 When control rights are switched to the PC

"NETWORK CONTROL" appears on the monitor.
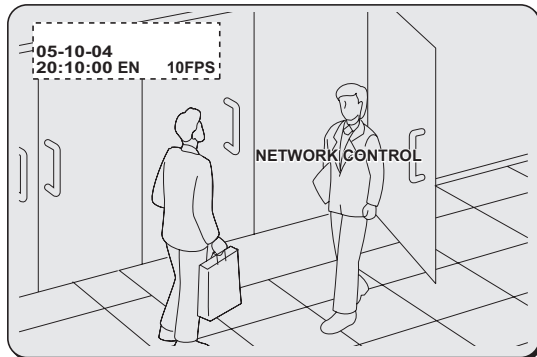
▶ **NOTE** ▶

● The "NETWORK CONTROL" message is not displayed when network operation has been set to "ON (DISPLAY:OFF)" using the unit's menu. (Regardless of network operations, the unit will continue to display images.)

2 When control rights are switched to the unit

Whenever the ⊻ button on the PC's operation screen is clicked, access will be cancelled and control rights will switch back to the unit. In addition, the "NETWORK CONTROL" message from the unit's on-screen display will be changed to "DISCONNECTED".

● Once the message has changed to "DISCONNECTED", it can be cleared by pressing any of the unit's buttons.
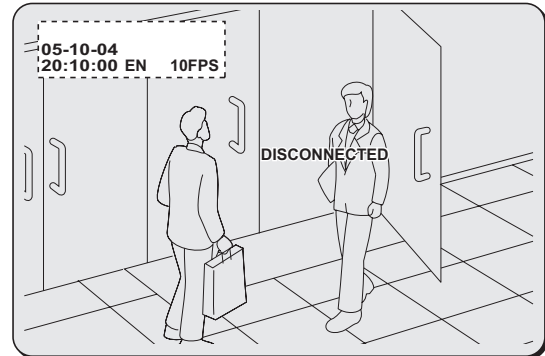
3 Forced disconnection from the unit

To forcibly cancel access by a PC, press and hold the unit's [EXIT/OSD] button for at least 2 seconds. When access is forcibly cancelled in this way, the "NETWORK CONTROL" message will disappear.

● Access from the PC will not be permitted for a period of 10 seconds after access has been canceled.

Display on the PC

1 When disconnected from the network
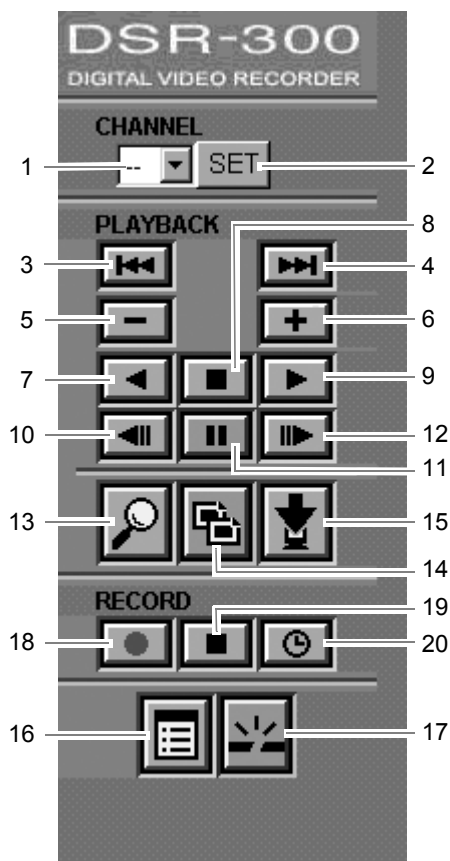

2 When access cannot be made to a connected DVR

3 When accessing a DVR that is already connected to another 4 PCs

Channel and screen selection buttons

1. Channel selection (ID2/3)
When a multiplexer is connected, this button selects the channel for the monitoring camera (--, 1, 2, 3--, or 16).

2. SET
This button sets the channel corresponding to the number selected using 1.

Playback buttons

3. Previous event (ID2/3)
This button starts playback from the previous alarm event.

4. Next event (ID2/3)
This button starts playback from the next alarm event.

5. Speed down (ID2/3)
This button reduces the playback speed by one setting.

6. Speed up (ID2/3)
This button increases the playback speed by one setting.

7. Reverse playback (ID2/3)
This button starts playback of recorded images in the reverse direction.

8. Stop (ID1/2/3)
This button stops playback and calls up the live display.

9. Playback (ID2/3)
This button starts playback of recorded images.

10. Previous image (ID2/3)
This button moves a still image back by one frame or one field.

11. Still (ID2/3)
This button pauses the image during playback.

12. Next image (ID2/3)
This button moves a still image forward by one frame or one field.

Setting buttons

13. Search (ID2/3)
This button calls up the search screen (i.e., the setting screen).

14. Copy (ID2/3)
This button calls up the copy screen (i.e., the setting screen).

15. Download (ID2/3)
This button calls up the download screen (i.e., the setting screen).

16. Menu setting (ID3)
This button calls up the menu screen (i.e., the setting screen).

17. Disconnect (ID1/2/3)
This button disconnects the PC from the network and switches control rights to the unit.

Recording buttons

18. Record (ID3)
This button starts normal recording.

19. Record stop (ID3)
This button stops normal recording.

20. Timer (ID3)
This button activates timer standby mode when clicked while recording is stopped. If clicked in Timer Standby mode, it deactivates this mode.

*: Entries in parentheses refer to user level restrictions for the specific button. (→P. 110)
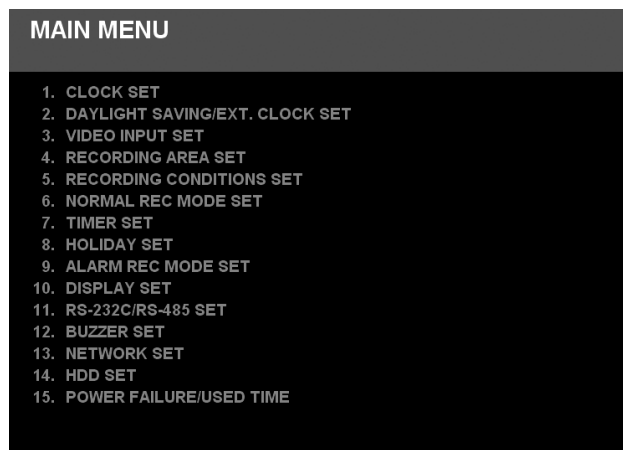
NETWORK
CONTROL

Before using the unit, settings should be made for recording conditions, installation environment, and other similar factors. The corresponding menu items are displayed in a two-level structure comprising main menus and sub-menus.
For more details regarding setting methods, see "2. MENU-SPECIFIC SETTINGS" (→P. 99).

Making menu selection

1 Click the ▤ button on the operation panel.

The MAIN MENU screen is displayed.

MAIN MENU

  1. CLOCK SET
  2. DAYLIGHT SAVING/EXT. CLOCK SET
  3. VIDEO INPUT SET
  4. RECORDING AREA SET
  5. RECORDING CONDITIONS SET
  6. NORMAL REC MODE SET
  7. TIMER SET
  8. HOLIDAY SET
  9. ALARM REC MODE SET
10. DISPLAY SET
11. RS-232C/RS-485 SET
12. BUZZER SET
13. NETWORK SET
14. HDD SET
15. POWER FAILURE/USED TIME

---

2 On the MAIN MENU screen, select and click the menu to be used.

The corresponding sub-menu screen appears.

3 Make the required settings.

4 When settings have been completed, click the ▪ button on the operation panel.

The Live screen is displayed.

◀ NOTE ▶ ─────────────────

● Menu screens will not be displayed during playback. In such a case, stop playback, return to live mode, and then click the ▤ button.
● You must be connected with user level ID3 to modify settings.
● It will not be possible to modify settings when the unit is recording.
● To move from one sub-menu to another, click the ▤ button to return first of all to the MAIN MENU.

Menu structure

|	Main menu	Sub menu	Reference page
Recording conditions	1. CLOCK SET	● CLOCK SET	P. 99
	2. DAYLIGHT SAVING/ EXT. CLOCK SET	● DAYLIGHT SAVING ● EXT. CLOCK SET	P. 99
	3. VIDEO INPUT SET	● MULTIPLEXER	P. 100
	4. RECORDING AREA SET	● TOTAL CAPACITY ● Area-specific capacity ● AREA FULL RESET	P. 101
	5. RECORDING CONDITIONS SET	● NORMAL RECORDING AREA OVERWRITE ● ALARM RECORDING AREA OVERWRITE ● REMAINING DISK WARNING	P. 102
	6. NORMAL REC MODE SET	● PICTURE QUALITY ● FRAME/FIELD RECORDING ● AUDIO RECORDING ● REC RATE	P. 103
	7. TIMER SET	● TIMER SET	P. 104
	8. HOLIDAY SET	● HOLIDAY SET	P. 105
	9. ALARM REC MODE SET	● PICTURE QUALITY ● FRAME/FIELD RECORDING ● AUDIO RECORDING ● ALARM RECORDING (REC RATE, DURATION) ● PRE-ALARM RECORDING (REC RATE, DURATION) ● ALARM TRIGGER ● MOTION SENSOR LEVEL	P. 105
Installation environment	10. DISPLAY SET	● DATE ● TIME ● QUALITY ● REC RATE ● ALARM COUNT ● ALARM TYPE	P. 108
	11. RS-232C/RS-485 SET	● CONTROL ● DATA SPEED ● STATUS INFO ● ALARM INFO ● ADDRESS	P. 109
	12. BUZZER SET	● ALARM ● DISK FULL ● DISK ERROR ● LOCK WARNING ● KEY IN ● NON REC	P. 109
	13. NETWORK SET	● IP ADDRESS ● SUBNET MASK ● GATEWAY ● PORT ● PASSWORD SETTING ● NETWORK SPEED	P. 110
	14. HDD SET	● Hard disk capacity	P. 111
	15. POWER FAILURE/ USED TIME	● POWER FAILURE ● USED TIME ● FIRMWARE	P. 111

* ☐ indicates the display of information only.

NETWORK SETTINGS

1. CLOCK SET

Set the unit's time and date as described below.

1 Select the "Month/Day/Year Hour/ Minutes" field.

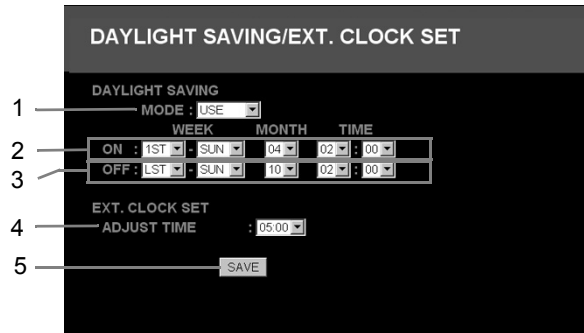The day of the week will be set automatically based on the date.
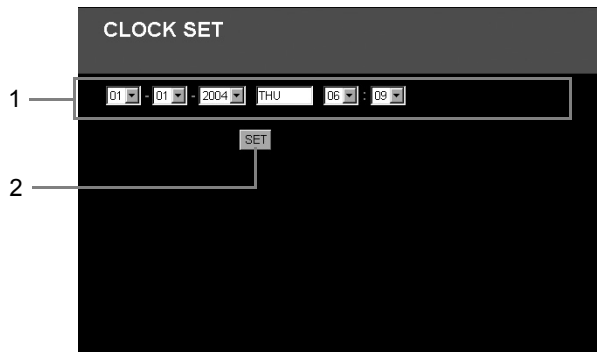
2 Click [SET].

The current time is set.

2. DAYLIGHT SAVING/EXT. CLOCK SET

DAYLIGHT SAVING setting

1 Change the setting for daylight savings time.

[Settings] (◆ indicates default setting.)

Setting	Description
◆USE	Time is automatically adjusted to daylight savings time.
NO USE	Time is not automatically adjusted to daylight savings time.

2 Set the date/time at which to switch from standard time to daylight savings time.

3 Set the date/time at which to switch from daylight savings time to standard time.

EXT. CLOCK SET setting

Synchronized operation will not be possible when time differences exist between the unit and the connected peripheral devices. By setting the external time as described here, all devices connected to the clock adjust terminal can be set to the same time.

4 Select "ADJUST TIME".

Each day at the specified time, a signal will be output to adjust the time of connected devices.

5 Click [SAVE].

The daylight savings time or adjustment time is set.

3. VIDEO INPUT SET

When a multiplexer (sold separately) has been connected to the unit, you can make settings as described below.

Multiplexer

Set the connected multiplexer's manufacturer as described below.

1 Select the manufacturer of the multiplexer from the screen's pull-down menu.

VIDEO INPUT SET

MULTIPLEXER : NO USE ▼

SAVE

[Settings] (◆ indicates default setting.)

Setting	Description
◆NO USE	This item should be selected when no multiplexer is being used.
SANYO	As these multiplexers can decode channel information, whenever multiplexer images are being recorded, you will be able to indicate a camera number (i.e., channel information) from the recorded images for playback.
OTHERS1	This item should be selected when using a Sony multiplexer. Decoding of channel information will be possible.
OTHERS2	This item should be selected when using a DM or Robot multiplexer. Decoding of channel information will be possible.
OTHERS3	This item should be selected when using a multiplexer that has not been manufactured by Sanyo, Sony, DM, or Robot.

NOTE ▶

● When a Sanyo, Sony, DM, Robot multiplexer or any other multiplexer capable of decoding channel information is connected, it will be possible to specify channel numbers for playback. For details regarding the playback method, see "Playing back recorded images" (→P. 113).

NETWORK SETTINGS

4. RECORDING AREA SET

The unit's hard disk is separated into three independent recording areas. Furthermore, five different recording modes can be used for these three areas.
The memory capacity for each area is allocated as a percentage. (Setting units: 1%)

Recording area	Recording mode		Recording method
Normal recording area	Normal recording	Manual	Recording is performed in response to manual operation of the operation panel's ⬛ button.
	Timer recording	Automatic	Recording is performed automatically over the time range set using "7. TIMER SET" from the MAIN MENU.
Alarm recording area	Alarm recording	Automatic	Recording is performed automatically upon occurrence of an alarm set using "9. ALARM REC MODE SET" from the MAIN MENU.
	Pre-alarm recording	Automatic	Automatic recording of images before an alarm is performed automatically in accordance with "PRE-ALARM RECORDING" from the MAIN MENU's "9. ALARM REC MODE SET". This is used as a complementary function for alarm recording.
Archive area	Copy	Manual	The required images are copied from another recording area and stored in response to manual operation of the operation panel's 🔲 button.

(1) Total capacity display
This section displays the total capacity of the hard disk.

(2) Area-specific capacity display
This section displays the capacity set by the unit for each recording area as a percentage of the total capacity.

> **NOTE** ▶
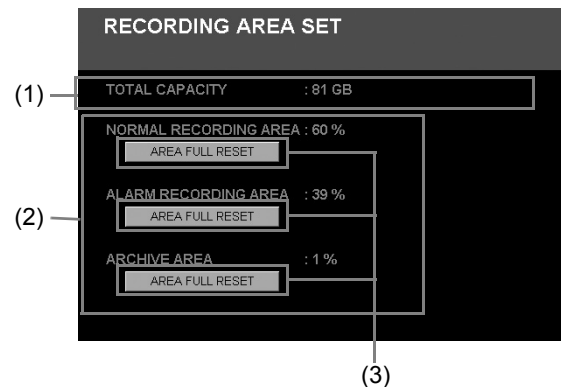> ● Setting and modification of recording area capacities cannot be carried out from a PC.

(3) Recording area reset
When the overwrite setting is "OFF", recording will be automatically stopped when the corresponding recording area has been filled with image data. In such a case, [AREA FULL RESET] can be clicked to clear all recorded data and to restart recording from the beginning of each area.

> **NOTE** ▶
> The ability to perform a reset will not be required in the following cases, and for this reason, [AREA FULL RESET] is not displayed.
> ● When the overwrite setting is "ON".

RECORDING AREA SET

(1) TOTAL CAPACITY : 81 GB

NORMAL RECORDING AREA : 60 %
AREA FULL RESET

(2) ALARM RECORDING AREA : 39 %
AREA FULL RESET

ARCHIVE AREA : 1 %
AREA FULL RESET

(3)

5. RECORDING CONDITIONS SET

Set the permission for overwriting to recording areas or the remaining-space warning level as described below.

```
        RECORDING CONDITIONS SET

1 ─── NORMAL RECORDING AREA
          OVERWRITE              : ON ▼

2 ─── ALARM RECORDING AREA
          OVERWRITE              : ON ▼

3 ─── REMAINING DISK WARNING  : ** ▼ %

4 ───────────── SAVE
```

Setting overwriting permission for the normal recording area

When the normal recording area has been filled with data, this setting dictates whether recording will be stopped or continued by overwriting the recorded images currently stored on the hard disk.

1 Select "OVERWRITE" for normal recording area.

[Settings] (◆ indicates default setting.)

Setting	Description
◆ON	When the normal recording area has been filled with data, overwriting from the beginning of this area will start automatically.
OFF	Recording is stopped when the normal recording area has been filled with data.

Setting overwriting permission for the alarm recording area

When the alarm recording area has been filled with data, this setting dictates whether recording will be stopped or continued by overwriting the recorded images currently stored on the hard disk.

2 Select "OVERWRITE" for alarm recording area.

[Settings] (◆ indicates default setting.)

Setting	Description
◆ON	When the alarm recording area has been filled with data, overwriting from the beginning of this area will start automatically.
OFF	Recording is stopped when the alarm recording area has been filled with data.

Setting the remaining-space warning level

In situations where the overwrite setting for the normal recording area and the alarm recording area is "OFF", you can have the unit issue a warning as soon as the remaining space in either of these areas reaches a specific level. (→P. 109)
The following section describes how to set the level at which the warning will be issued.

3 Setting the remaining-space warning level.
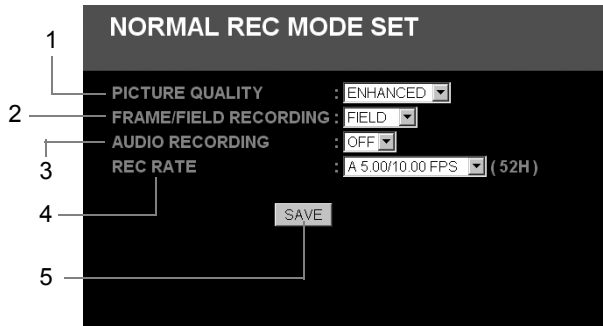
Setting range: 1% to 10% (in units of 1%)

⚠ CAUTION

● If the overwrite setting for the normal recording area and the alarm recording area is "ON", the remaining-space warning level will be displayed as "**" and setting will not be possible.

4 Click [SAVE].

The new setting is saved.

NETWORK SETTINGS

6. NORMAL REC MODE SET

Set conditions for normal recording and timer recording as described below.

NORMAL REC MODE SET

1 — PICTURE QUALITY : ENHANCED ▼
2 — FRAME/FIELD RECORDING : FIELD ▼
3 — AUDIO RECORDING : OFF ▼
4 — REC RATE : A 5.00/10.00 FPS ▼ (52H)
5 — SAVE

Setting the picture quality for recording

Set the picture quality for recording to the normal recording area as follows.

1 Select "PICTURE QUALITY".

[Settings] (◆ indicates default setting.)

Setting	Description
SUPER FINE	Super Fine
FINE	Fine
◆ ENHANCED	Enhanced
NORMAL	Normal
BASIC	Basic

2 Select "FRAME" or "FIELD" recording.

[Settings] (◆ indicates default setting.)

Setting	Description
◆ FIELD	Sets the recording method to field. This is the normal recording method.
FRAME	Sets the recording method to frame. This method is used when the resolution of still-type images must be improved. Note, however, that this method is not suitable for fast-moving images as they can become blurred.

Setting audio recording

Audio can be recorded together with images when performing normal recording.
Note, however, that since this audio data will also be stored in the normal recording area, the recording time for this area will be reduced.

3 Select "AUDIO RECORDING".

[Settings] (◆ indicates default setting.)

Setting	Description
ON	Audio will be recorded.
◆ OFF	Audio will not be recorded.

NOTE ▶

● Audio recording can only be specified when the recording rate is more than A 5.00/10.00 FPS.

Setting the recording rate

Set the recording rate for normal recording as follows.
(Default setting: A 5.00/10.00 FPS)

4 Select the recording rate for normal recording.

A 30.00/60.00, A 15.00/30.00, A 10.00/20.00, A 7.50/15.00, A 5.00/10.00, 3.75/7.50, 3.00/6.00, 2.50/5.00, 2.14/4.29, 1.88/3.75, 1.67/3.33, 1.50/3.00, 1.36/2.73, 1.15/2.31, 1.00/2.00, 0.83/1.67, 0.71/1.43, 0.63/1.25, 0.56/1.11, 0.50/1.00, 0.25/0.50, 0.17/0.33, 0.13/0.25, 0.10/0.20, 0.05/0.10, 0.03/0.05, 0.02/0.03 (Unit: FPS)

Selecting setting values
Image resolution is determined by the product of picture quality and recording rate. The higher the picture quality and the faster the recording rate, the better the image resolution; however, as higher resolution requires more storage capacity, the recording time will be reduced accordingly.

NOTE ▶

● The recording rate will be limited between A 10.00/ 20.00 and 0.50/1.00 FPS when the setting for pre-alarm recording is "ON".
● The recording rate for timer recording should be set separately using the TIMER SET menu. (→P. 104)

5 Click [SAVE].

The new setting is saved.

7. TIMER SET

Set timer operation duration and timer recording conditions on a day-specific basis as shown below.

(1)　　　　(2)　　　　(3)　　　　(4)　　　　(5)

TIMER SET

WEEK	START	STOP	REC RATE	SET
SUN	-- : --	-- : --	A 5.00/10.00 FPS	OFF
MON	-- : --	-- : --	A 5.00/10.00 FPS	OFF
TUE	-- : --	-- : --	A 5.00/10.00 FPS	OFF
WED	-- : --	-- : --	A 5.00/10.00 FPS	OFF
THU	-- : --	-- : --	A 5.00/10.00 FPS	OFF
FRI	-- : --	-- : --	A 5.00/10.00 FPS	OFF
SAT	-- : --	-- : --	A 5.00/10.00 FPS	OFF
DLY	-- : --	-- : --	A 5.00/10.00 FPS	OFF	OVER 24H

(6)

For setting timer recording spanning more than 24 hours

SAVE

1 Setting timer recording conditions for different days of the week.

(1) WEEK
These fields specify the days of the week for timer recording. By using multiple setting rows, it is possible to setup timer recording a number of different times on a single day.

(2) START
These fields are used to enter the time at which to start timer recording.

(3) STOP
These fields are used to enter the time at which to stop timer recording.

(4) REC RATE
These fields set the recording rate. (→P. 103)

(5) SET
Set these fields to "ON" to set timer recording.
Set these fields to "OFF" when timer recording is not to be set.

(6) SAT, DLY
When the start and stop times and the recording rate have been entered and "ON" has been selected for "SET", you will be able to carry out timer recording over the same period every day.
Note that conditions set using "DLY" are given priority over those set for individual days of the week.

NOTE ▶

● If "DLY" is set for any other day, all rows will adopt this setting.

2 Click [SAVE].

Timer setting (or modification) is completed.

■ **Performing timer recording**
Click the [⏰] button on the operation panel. (→P. 96)

■ **Overlapping of timer reservation times**
When timer reservation times overlap, priority is given to the earlier setting.

■ **Setting a timer for over 24-hours continuous recording**
The bottom two lines of the TIMER SET screen are used to make settings for this type of recording.
(1) Click [OVER 24H] to switch the setting format.
(2) Set the day and time for the start of recording in the upper row.
(3) Set the day, time, and recording rate for the end of recording in the lower row.
(4) Select "ON" for "SET" on the bottom row to specify timer recording extending for over 24 hours.

NETWORK SETTINGS

8. HOLIDAY SET

Set specific days as holidays using the procedure described below.

When a day is specified as a holiday, timer recording for that day will be carried out as if it were a Sunday.

Dates such as national holidays and company off days should be set as holidays when you want those dates to have the same security as Sundays.

HOLIDAY SET

1 Specify the day to be treated as a holiday.

Left side: Month Right side: Day

A maximum of 20 different days can be specified as holidays.

2 Click [SAVE].

The saved or modified settings are stored.

⚠ CAUTION

● If "DLY" is set for any row, timer recording on Sundays will also be carried out in accordance with that row's settings. In other words, "DLY" includes Sundays and is given priority over other settings.

9. ALARM REC MODE SET

Set the recording conditions for alarm recording as follows.

Setting the picture quality for recording

Set the picture quality for alarm recording as follows.

ALARM REC MODE SET

1 Select "PICTURE QUALITY".

[Settings] (◆ indicates default setting.)

Setting	Description
SUPER FINE	Super Fine
FINE	Fine
◆ENHANCED	Enhanced
NORMAL	Normal
BASIC	Basic

2 Select "FRAME" or "FIELD" recording.

[Settings] (◆ indicates default setting.)

Setting	Description
◆FIELD	Sets the recording method to field. This is the normal recording method.
FRAME	Sets the recording method to frame. This method is used when the resolution of still-type images must be improved. Note, however, that this method is not suitable for fast-moving images as they can become blurred.

Setting audio recording

Audio can be recorded together with images when performing alarm recording. Note, however, that since this audio data will also be stored in the alarm recording area, the recording time for this area will be reduced.

3 Select "AUDIO RECORDING".

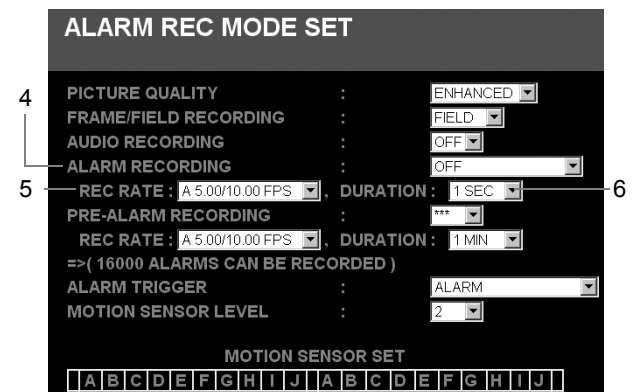[Settings] (◆ indicates default setting.)

Setting	Description
ON	Audio will be recorded.
◆ OFF	Audio will not be recorded.

NOTE ►

● Audio recording can only be specified when the recording rate is more than A 5.00/10.00 FPS.

Setting alarm recording

In order to carry out alarm recording, it will be necessary to set operation patterns and recording conditions.

ALARM REC MODE SET

4 — PICTURE QUALITY : ENHANCED
FRAME/FIELD RECORDING : FIELD
AUDIO RECORDING : OFF
ALARM RECORDING : OFF
5 — REC RATE : A 5.00/10.00 FPS , DURATION : 1 SEC — 6
PRE-ALARM RECORDING : ***
REC RATE : A 5.00/10.00 FPS , DURATION : 1 MIN
=>(16000 ALARMS CAN BE RECORDED)
ALARM TRIGGER : ALARM
MOTION SENSOR LEVEL : 2

MOTION SENSOR SET
A B C D E F G H I J A B C D E F G H I J

4 Select a mode using "ALARM RECORDING".

[Settings] (◆ indicates default setting.)

Setting	Description
◆ OFF	Does not perform alarm recording.
ENABLED	Alarm recording is always performed, regardless of timer recording or timer settings.
AL-REC ON TIMER	Alarm recording is performed only during timer recording.
AL-REC OFF TIMER	Alarm recording is performed only during recording other than timer recording.
OLY AL-RC ON TMR	Alarm recording is performed only in the period set for timer recording without timer recording actually being performed.

5 Select "REC RATE".

A 30.00/60.00, A 15.00/30.00, A 10.00/20.00, A 7.50/15.00, A 5.00/10.00, 3.75/7.50, 3.00/6.00, 2.50/5.00, 2.14/4.29, 1.88/3.75, 1.67/3.33, 1.50/3.00, 1.36/2.73, 1.15/2.31, 1.00/2.00, 0.83/1.67, 0.71/1.43, 0.63/1.25, 0.56/1.11, 0.50/1.00, 0.25/0.50, 0.17/0.33, 0.13/0.25, 0.10/0.20, 0.05/0.10, 0.03/0.05, 0.02/0.03 (Unit: FPS)
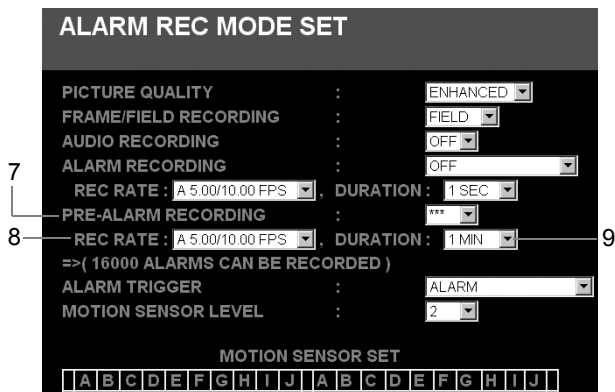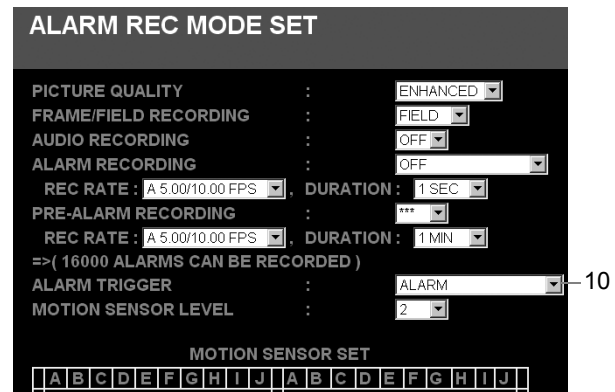
6 Set the duration for alarm recording using "DURATION".

1 SEC, 2 SEC, 5 SEC, 10 SEC, 20 SEC, 40 SEC, 1 MIN, 2 MIN, 3 MIN, 4 MIN, 5 MIN, 10 MIN, 15 MIN, *CC
(Default setting: 1 SEC)
*CC: Operates while an alarm is being activated.

NETWORK SETTINGS

Setting pre-alarm recording

Set the recording conditions to be used for pre-alarm recording as described below. (→P. 112)

```
ALARM REC MODE SET

   PICTURE QUALITY            :        ENHANCED ▼
   FRAME/FIELD RECORDING      :        FIELD ▼
   AUDIO RECORDING            :        OFF ▼
   ALARM RECORDING            :        OFF         ▼
      REC RATE : A 5.00/10.00 FPS ▼ , DURATION : 1 SEC ▼
   PRE-ALARM RECORDING        :        *** ▼
      REC RATE : A 5.00/10.00 FPS ▼ , DURATION : 1 MIN ▼
   =>( 16000 ALARMS CAN BE RECORDED )
   ALARM TRIGGER              :        ALARM       ▼
   MOTION SENSOR LEVEL        :        2 ▼

            MOTION SENSOR SET
   A B C D E F G H I J  A B C D E F G H I J
```
7 (pointing to PRE-ALARM RECORDING)
8 (pointing to REC RATE)
9 (pointing to DURATION)

7 Select "ON" or "OFF" using "PRE-ALARM RECORDING".

[Settings]

Setting	Description
ON	Performs pre-alarm recording.
OFF	Does not perform pre-alarm recording.

> **NOTE** ▶
>
> ● When "OFF" has been selected for "ALARM RECORDING", this item will be displayed as "**" and selection will not be possible.

8 Make a selection for "REC RATE".

A 10.00/20.00, A 7.50/15.00, A 5.00/10.00, 3.75/7.50, 3.00/6.00, 2.50/5.00, 2.14/4.29, 1.88/3.75, 1.67/3.33, 1.50/3.00, 1.36/2.73, 1.15/2.31, 1.00/2.00, 0.83/1.67, 0.71/1.43, 0.63/1.25, 0.56/1.11, 0.50/1.00 (Unit: FPS)
(Default setting: A 5.00/10.00 FPS)

9 Set the duration for pre-alarm recording using "DURATION".

2 SEC, 3 SEC, 5 SEC, 10 SEC, 20 SEC, 40 SEC, 1 MIN, 2 MIN, 3 MIN, 4 MIN, 5 MIN, 10 MIN, 15 MIN
(Default setting: 1 MIN)

Setting alarm triggers

Set the alarm triggers (i.e., launch signals) that constitute operation conditions for alarm recording as follows.

```
ALARM REC MODE SET

   PICTURE QUALITY            :        ENHANCED ▼
   FRAME/FIELD RECORDING      :        FIELD ▼
   AUDIO RECORDING            :        OFF ▼
   ALARM RECORDING            :        OFF         ▼
      REC RATE : A 5.00/10.00 FPS ▼ , DURATION : 1 SEC ▼
   PRE-ALARM RECORDING        :        *** ▼
      REC RATE : A 5.00/10.00 FPS ▼ , DURATION : 1 MIN ▼
   =>( 16000 ALARMS CAN BE RECORDED )
   ALARM TRIGGER              :        ALARM       ▼
   MOTION SENSOR LEVEL        :        2 ▼

            MOTION SENSOR SET
   A B C D E F G H I J  A B C D E F G H I J
```
10 (pointing to ALARM TRIGGER)

10 Select a launch signal for alarm recording using "ALARM TRIGGER".

[Settings] (◆ indicates default setting.)

Setting	Description
◆ ALARM	Starts recording when an external alarm is activated.
SENSOR	Starts recording when a motion sensor is activated.
ALARM AND SENSOR	Starts recording when both an external alarm and a motion sensor are activated simultaneously.
ALARM OR SENSOR	Starts recording when an external alarm or a motion sensor is activated independent of the other.

> **NOTE** ▶
>
> ● **External alarm detection**
> The term "external alarm detection" is used to describe input of an external detection signal from a door switch or the like to the unit's alarm input terminal.
> ● **Motion sensor detection**
> The term "motion sensor detection" is used to refer to detection of motion on the monitor in accordance with motion sensor settings.
> ● When using a multiplexer, the recorder's motion sensor is disabled.

Setting motion sensors

You can specify the position of motion sensors on screen as described below. Alarm images are recorded when a moving subject is detected at the specified position.

ALARM REC MODE SET

REC RATE : A 5.00/10.00 FPS , DURATION : 1 MIN
=>(16000 ALARMS CAN BE RECORDED)
ALARM TRIGGER : ALARM
MOTION SENSOR LEVEL : 2
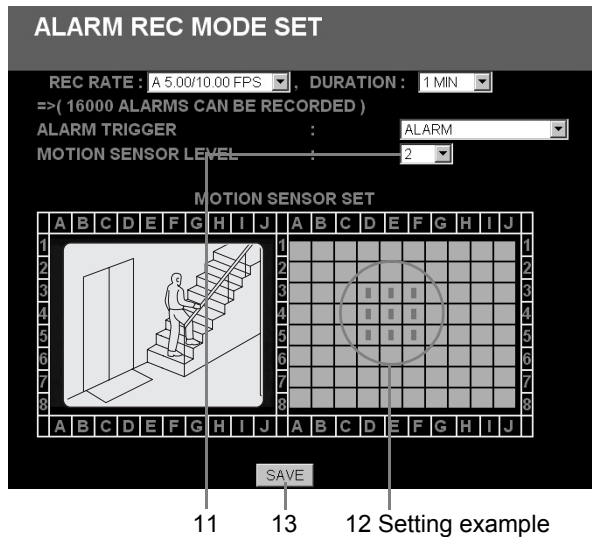
MOTION SENSOR SET

11   13   12 Setting example

11 **Set the motion sensor level.**

[Settings] (◆ indicates default setting.)

Setting	Description
◆OFF	Motion sensing is not carried out.
1 to 10	Motion sensing will be carried out. Lower values correspond to higher sensitivities.

12 **Click the location where the motion sensor is to be setup.**

"ON" (displayed ▮) is displayed for the corresponding sensor.
Click again to turn the sensor "OFF" (i.e., no display).

13 **Click [SAVE].**

The new settings are saved.

10. DISPLAY SET

Set conditions for the display of data on the unit's monitor by selecting "ON" or "OFF" for each item.

DISPLAY SET

DATE : ON
TIME : ON
QUALITY : ON
REC RATE : ON
ALARM COUNT : ON
ALARM TYPE : ON

1

2   SAVE
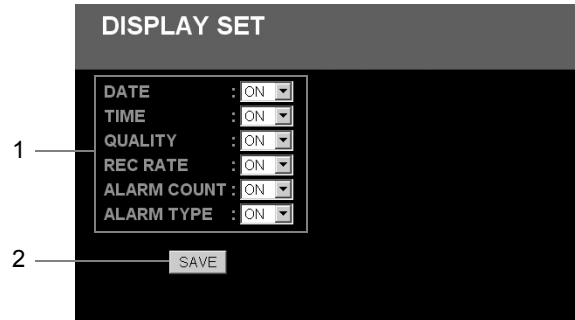
> **NOTE**

● These settings apply to information displayed on the monitor connected to the unit, not to the PC monitor's display information.

1 **Select "ON" or "OFF" for each data display item.**

Item	Default setting	Description
DATE	ON	Sets whether the current date or recording date will be displayed.
TIME	ON	Sets whether the current time or recording time will be displayed.
QUALITY	ON	Sets the picture quality for recording or playback.
REC RATE	ON	Sets the recording rate for recording or playback.
ALARM COUNT	ON	Sets a maximum display quantity of 9,999, and when this is exceeded, counting restarts from 0.
ALARM TYPE	ON	Sets the alarm recording type. ● "ALARM" is displayed for alarm recording. ● "PRE" is displayed for pre-alarm recording.

2 **Click [SAVE].**

The on-screen data display conditions are set or modified.

NETWORK SETTINGS

11. RS-232C/RS-485 SET

This screen displays settings relevant to the unit's interfaces.

> **NOTE** ▶
>
> ● It will not be possible to modify settings: The screen displays data for confirmation purposes only.

	Item	Overview	Setting	Description
(1)	CONTROL	Displays the type if interface being used for control of the unit.	RS-232C	When RS-232C is being used.
			RS-485	When RS-485 is being used.
(2)	DATA SPEED	Displays the RS-232C or RS-485 communication speed.	2400/4800/9600/ 19200 (bps)	
(3)	STATUS INFO	Displays whether or not status information will be transmitted during RS-485 communication.	ON	Status information will be transmitted.
			OFF	Status information will not be transmitted.
(4)	ALARM INFO	Displays whether or not alarm information will be transmitted during RS-485 communication.	ON	Alarm information will be transmitted.
			OFF	Alarm information will not be transmitted.
(5)	ADDRESS	Displays the address when RS-485 has been selected.	0 to 127	Set within the range of 0 to 127.

12. BUZZER SET

Set a warning buzzer to sound for alarms or when the hard disk space reaches zero as described below.

1 Select "ON" or "OFF" for the alarm buzzer.

> **NOTE** ▶
>
> ● **To sound a buzzer on the PC**
> Create a folder named BUZZER in the PC's root directory, and save the sound file to use as the buzzer tone as C:\BUZZER\BUZZER.WAV.
> When a PC-monitored DVR generates an alarm, the PC also sounds a buzzer, using the saved sound file.
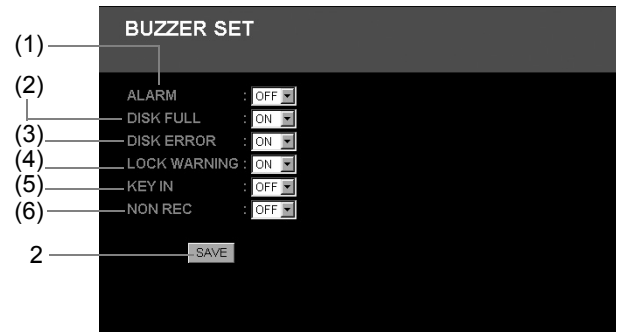
	Item	Default setting	Description
(1)	ALARM	OFF	Sounds a buzzer when an alarm is detected.
(2)	DISK FULL	ON	Sounds a buzzer when the amount of data stored in each of the hard disk's recording areas has reached the remaining-space warning level. (→P. 102)
(3)	DISK ERROR	ON	Sounds a buzzer when a hard-disk error occurs.
(4)	LOCK WARNING	ON	Sounds a buzzer when an operation button not permitted for the current user level is pressed while the security lock is set. Specifically, the buzzer sounds twice with an interval of approximately 0.5 seconds.
(5)	KEY IN	OFF	The buzzer emits a key-operation sound each time a button is pressed.
(6)	NON REC	OFF	Sounds a buzzer when recording is stopped.

2 Click [SAVE].

The new settings are saved.

13. NETWORK SET

Network settings must be made in advance on the unit whenever it is to be controlled via a network. Once this has been done, settings can then be changed from the controlling PC.

◀ **NOTE** ▶

● **Changing network-related settings**
When these settings are modified, connection will be canceled and control rights will be returned to the unit. To restore the connection, repeat network settings on the PC to match the modified unit settings.

NETWORK SET

(1) — IP ADDRESS : 192 . 168 . 0 . 1
(2) — SUBNET MASK : 255 . 255 . 255 . 0
(3) — GATEWAY : 0 . 0 . 0 . 0
    PORT : 80

(4)

    PASSWORD SETTING
      ID   PASSWORD (4-8)
(5)   ID1 : 1111
      ID2 : 2222
      ID3 : 3333

(6) — NETWORK SPEED : NO LIMIT ▼

2 — SAVE

1 Change the settings as required.

	Item	Description
(1)	IP ADDRESS	Allows the unit's IP address to be modified.
(2)	SUBNET MASK	Allows the unit's subnet mask to be modified.
(3)	GATEWAY	Allows the unit's gateway to be modified.
(4)	PORT	Allows the unit's port number to be modified. Set within the range of 1 to 65535. (default setting: 80)

◀ **NOTE** ▶

● If a value other than "80" is set as the default value for the port, when specifying the URL, enter a colon (:) and then the port number after the IP address.
For example, if the port number was set as "81", you should enter
http://192.168.0.1:81/

(5) PASSWORD SETTING
This item allows you to set a password for each different user level.

User level		1	2	3
User name		ID1	ID2	ID3
Usable menus	Monitoring of live images	○	○	○
	Monitoring and searching of recorded images		○	○
	Starting and stopping of recording; timer recording; modification of unit settings, etc.			○
Password (default setting)		1111	2222	3333

⚠ **CAUTION**

● Use between 4 and 8 alphanumeric characters for passwords.

(6) NETWORK SPEED
This item lets you modify the network speed setting.
NO LIMIT, 64, 128, 256, 512, or 1024 kbps

When the unit is reset, the network speed setting will revert to the default value (i.e., NO LIMIT).

2 Click [SAVE].

The network settings or modifications are saved.

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14. HDD SET

This screen displays the total capacity of the hard disk.

(1) —— HDD SET
DISK 1 : 81 GB
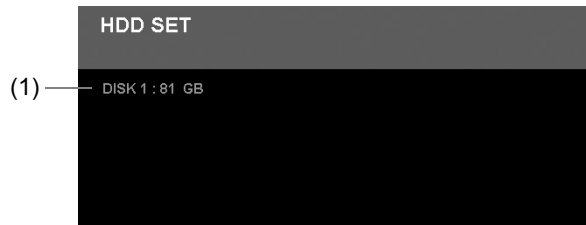
(1) Hard disk capacity
Displays the total capacity of the hard disk.

15. POWER FAILURE/USED TIME

Check the date and time of power failures and the amount of hard disk usage as described below.

POWER FAILURE/USED TIME

(1) —— POWER FAILURE
#003 FAILURE   01 - 02   04 : 37
RECOVER 01 - 02   04 : 45

(2) —— USED TIME
DISK1 USE   : 00101H
POWER   : 00107H

(3) —— FIRMWARE
VER   : 1.13-53
: 1.04-02
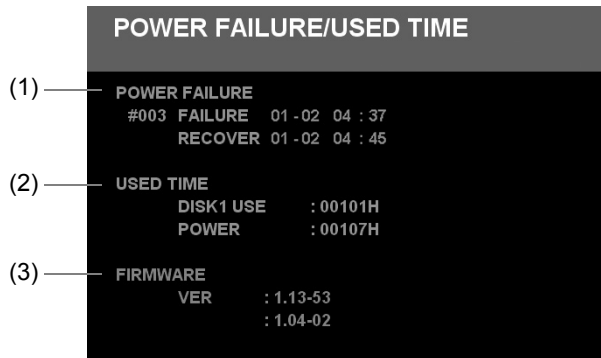
	Setting	Description
(1)	POWER FAILURE	Displays the number of power failures, the corresponding date and time, and the date and time of restoration of power.
(2)	USED TIME	Displays the usage time for the digital video recorder. DISK1 USE: Total usage time for Disk 1 POWER: Total usage time for the unit
(3)	FIRMWARE	Displays the firmware version.

1 RECORDING IMAGES
(when optional interface board is installed)

This section will describe the way in which monitored images and alarm images can be stored on the unit's internal hard disk.

Before any of these operations can be carried out, it will be necessary to make menu settings to match the installation environment. (→P. 98)

Normal recording

Monitored images can be recorded to the normal recording area by a manual operation.

1 Click the ⏺ button on the operation panel.

Normal recording starts.

Stopping normal recording

2 Click the ⏹ button on the operation panel.

Timer recording

Monitored images can be automatically recorded to the normal recording area in accordance with timer settings. Note that timer recording will not operate during normal recording.

1 Set the conditions for timer recording using the timer setting menu screen. (→P. 104)

2 Click the 🕐 button on the operation panel.

The unit will enter standby mode for timer recording, and recording will then start and stop automatically at the set times. The current condition for timer recording is displayed on-screen using the message "TIMER STANDBY" or "TIMER RECORDING".

Canceling timer recording

3 With "TIMER STANDBY" displayed, click the 🕐 button on the operation panel.

Alarm recording

When an alarm is detected by the alarm input terminal or a motion sensor, the recording of alarm images to the alarm recording area will start automatically.

Whenever alarm recording starts, normal recording, timer recording, and pre-alarm recording will be automatically terminated, and they will be automatically restarted as alarm recording ends.

1 Set the conditions for "ALARM RECORDING" using the "ALARM REC MODE SET" menu screen. (→P. 105)

(1) Regardless of the unit's current operation or condition, alarm recording will be started automatically whenever an alarm is detected.
(2) When the duration set for alarm recording has ended, alarm recording will be automatically stopped.

◀ NOTE ▶

● During alarm recording, a sound file from a specific folder on the PC can be played repeatedly to sound a unique alarm.
(1) Create a sound file (WAV) for the alarm.
(2) Apply the following name and store the file on the PC.
"C:\BUZZER\BUZZER.WAV"
When the alarm sound stops during alarm recording, click the stop button on the operation panel.

Pre-alarm recording

When pre-alarm recording has been setup, the same images as for normal recording will be constantly recorded to the alarm recording area as complementary images for alarm recording. Since advance images of a preset duration are overwritten and saved, it will be possible to view images from immediately before an alarm when alarm recording is being played back.

### 1 Set the conditions for "PRE-ALARM RECORDING" using the "ALARM REC MODE SET" menu screen. (→P. 107)

(1) The newest images from the preset duration will be automatically recorded and updated by overwriting.
(2) Pre-alarm recording will be automatically terminated whenever alarm recording starts, and it will be automatically restarted as alarm recording ends.

NETWORK OPERATION

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Monitored live images and recorded images can be viewed freely and whenever so required.
Note that switching to live or playback images, modifying the screen display, and other similar operations have absolutely no effect on timer recording and alarm recording.

Watching live images during playback

Click the ■ button on the operation panel. When playback has finished, the screen will switch back to the display of monitored live images.

Buttons used for playback
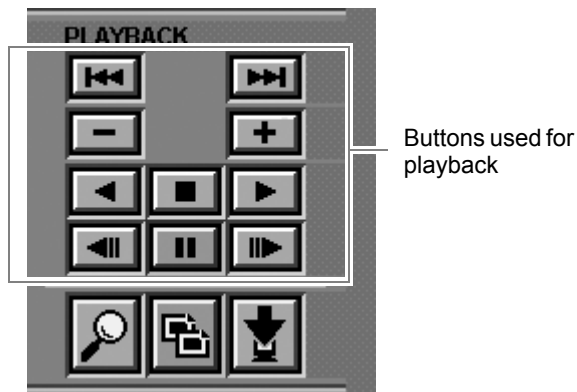
Playing back recorded images

The following two methods are available for the playback of images.

Image specification	Replay method
When no images are specified for replay	Click the ▶ button on the operation panel to switch to play mode and commence the playback of images from the normal recording area and the alarm recording area in the sequence in which they were recorded. ● When recorded images are played back for the first time or when a reset is performed from the unit, playback will start from the beginning of the stored data. ● Any subsequent playback will start at the last stop point.
When images are specified for replay	● The search function can be used to find the required images from the data stored in the hard disk's various recording areas. ● When the image for playback has been identified using search mode, the play mode screen will be automatically called up and the specified image will be played. For more details, see "3. SEARCH MODE" (→P. 118).

! CAUTION

Interference may appear on images or the playback may seem to have paused during the following operations; however, this is normal and no cause for concern.
● When the images from the normal recording area and the alarm recording area are played back in succession, the quality of the picture may drop momentarily as playback switches from one recording area to another.
● If normal, fast-forward, or fast-rewind playback is carried out either for playback during alarm recording or continuous playback from the normal recording area and alarm recording area, the image may seem to have paused in certain cases.

Specifying the channel (camera number)

When using multiple cameras and a multiplexer that can decode channel information (camera Nos.), you can specify the channel No. of the monitoring camera for monitor display.
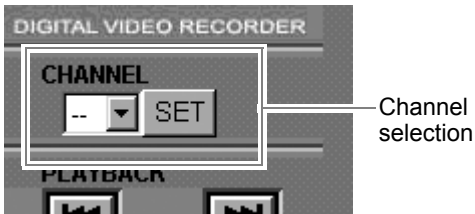
Channel selection

Select the channel.

Specify a channel to be viewed. The image from the specified channel will be displayed.
In addition, the corresponding channel number will be displayed in the "CHANNEL" box.

Performing operations in play mode

Playback

Click the ▶ button.

Adjusting the playback speed

During playback, click the ＋ or － button.

The playback speed will increase or decrease by one level accordingly.

Reverse playback

Click the ◀ button.

Adjusting the reverse playback speed

During reverse playback, click the ＋ or － button.

The reverse playback speed will increase or decrease by one level accordingly.

Still image

During playback, click the ❚❚ button.

Playback will be paused on the current image.
To return to normal play mode, click the ❚❚ button while playback is paused.

Frame advance (forward/reverse)

While playback is paused, click the ❚▶ or ◀❚ button.

The paused image will frame advance (forward/reverse) accordingly.

Alarm skip

During playback, click the ▶▶❚ or ❚◀◀ button.

The previous or next alarm image is displayed accordingly.

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Live mode image

(6)   (8) (9) (10)

LIVE   NORMAL RECORDING MODE [STOP]
(7)   ALARM RECORDING MODE [STOP]
01-02-04 06:39:44   ID1:3 ID2:1 ID3:0

(1) READ INTERVAL : [1▼]   SIZE : [1▼]   QUALITY : [2▼]   AUDIO : [OFF ▼]
SAVE TO PC : [OFF▼] [SET]

(5)   (2)   (3)   (4)

Play mode image

(6)   (11)   (8) (9) (12)

PLAY   NORMAL RECORDING MODE [STOP]
(7)   ALARM RECORDING MODE [STOP]
01-02-04 06:40:50   PLAYBACK AREA [NORMAL]   SPEED [STILL]

(1) READ INTERVAL : [1▼]   SIZE : [1▼]   QUALITY : [2▼]   AUDIO : [OFF ▼]
SAVE TO PC : [OFF▼] [SET]

(5)   (2)   (3)   (4)

Adjusting the image and audio

The images displayed on screen can be adjusted in a number of ways.
To make an adjustment, select the adjustment value from the menu and then click [SET].

(1) READ INTERVAL (Default setting: 1)
This item allows you to select one of five image display speeds.
Larger setting numbers correspond to higher speeds; however, the actual speed will depend on the speed of your network connection.
* When "(4) AUDIO" is set to "ON", "READ INTERVAL" cannot be set.

(2) SIZE (Default setting: 1)
This item allows you to select one of six image sizes.
Larger setting numbers correspond to larger image sizes.

1	320×240	4	800×600
2	400×300	5	$1,024 \times 768$
3	640×480	6	$1,280 \times 960$

(3) QUALITY (Default setting: 2)
This item allows you to select one of three picture quality settings.

1	Lowest quality
2	Standard quality
3	Best quality

(4) AUDIO (Default setting: OFF)
Sound can be played in live mode or play mode.

[Settings]

Setting	Description
OFF	Audio will not be played.
ON-5SEC - 30SEC	Audio will be played. Play mode has restrictions on fast-forward and frame advance. Set "AUDIO" to "OFF" if these functions become restricted.

(5) SAVE TO PC (Default setting: OFF)
When this is set to "ON", live images or playback images can be saved on a PC.

⚠ CAUTION

● A user level of ID2 or better is required for the recording of audio. The audio replay menu will not be displayed for ID1.
● When audio is to be played back, store the audio on the PC, install ActiveX for playback (→P. 91), and then set audio recording to "ON".
● Playback will be performed with priority given to audio, and as a result, images may not be displayed for certain hardware and software configurations.

Screen display items

(6) Image mode
LIVE: Live mode
PLAY: Play mode

(7) Time
Live mode: Displays the current time
Play mode: Displays the recording time

(8) NORMAL RECORDING MODE
This item displays the current condition for normal recording.
- STOP
- RECORDING
- TIMER STANDBY
- TIMER RECORDING
- AREA FULL (in normal recording area)

(9) ALARM RECORDING MODE
This item displays the current condition for alarm recording.
- STOP
- PRE ALARM RECORDING
- ALARM RECORDING
- AREA FULL (in alarm recording area)

(10) Connection user
In situations where a number of different users are connected, this item displays the connection condition for the various user levels.
Typical display: ID1: 3 ID2: 1 ID3: 0
The user ID for the current user is displayed in red.

(11) PLAYBACK AREA (in the play mode screen only)
This item displays the recording area for the current playback image
- ALARM
- PRE-ALARM
- NORMAL
- ARCHIVE

(12) SPEED (in the play mode screen only)
This item displays the playback speed and direction.

Display	Playback direction	Playback speed
PLAY	Forward	Normal
STILL	Still	Still
R.PLAY	Reverse	Normal
CUE	Forward	Fast-forward playback
REVIEW	Reverse	Fast-rewind playback
SLOW	Forward	Slow playback
R.SLOW	Reverse	Slow reverse playback

Settings for downloading live images to a PC

⚠ CAUTION

- To save live images or playback images on a PC, an exclusive plugin is necessary.
  Run plugin\Active Allinstall1.1.0\setup.exe on the supplied CD-ROM. (→P. 91)

1 **Live images will be displayed when connected with user level ID2 or ID3.**

"SAVE TO PC:****" is displayed.
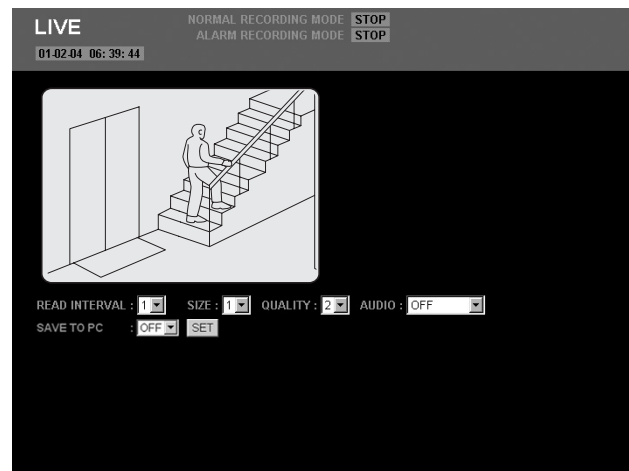
2 **Set "SAVE TO PC" to "ON" and then click [SET].**

The save setting items are displayed.
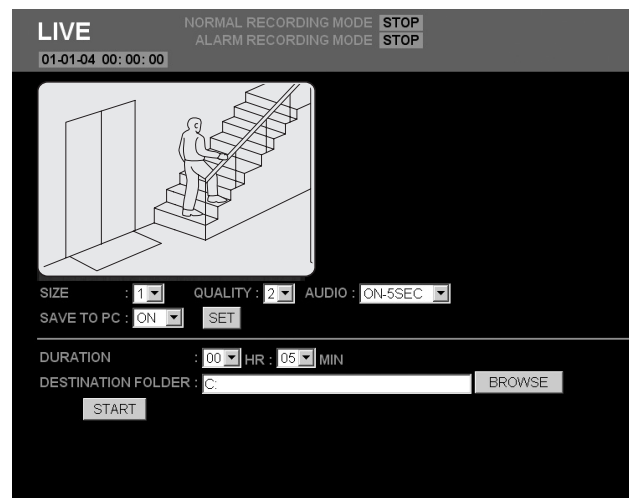
3 **Set the download time using "DURATION".**

4 Click [BROWSE].

A dialog box for selecting save location will be displayed, and a suitable location should be set.

NOTE ▶

● It is also acceptable to input a location for saving directly into "DESTINATION FOLDER".

5 Click [OK].

The setting menu will close and the screen will return to the condition for procedure 2 above.
The "DESTINATION FOLDER" location is displayed.

6 Click [START].

(1) The saving process begins.
The elapsed save time and the current save image are displayed on screen.
The elapsed save time will be incremented as the save progresses.
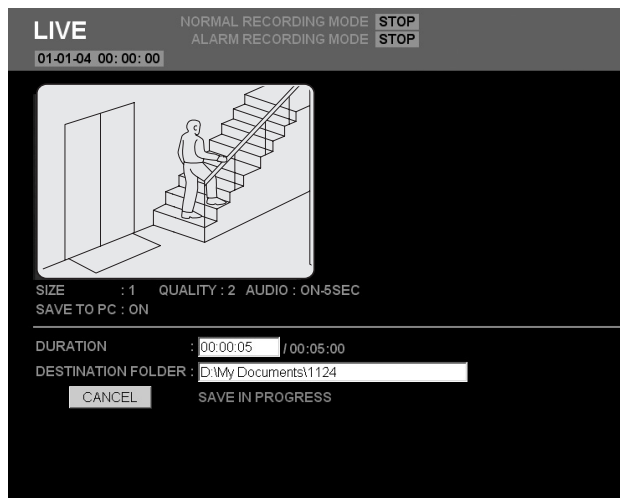
■ **To cancel a save operation**
Click [CANCEL].

(2) A pop-up window will be displayed when saving has been completed.
The final still image from the save process will be displayed.
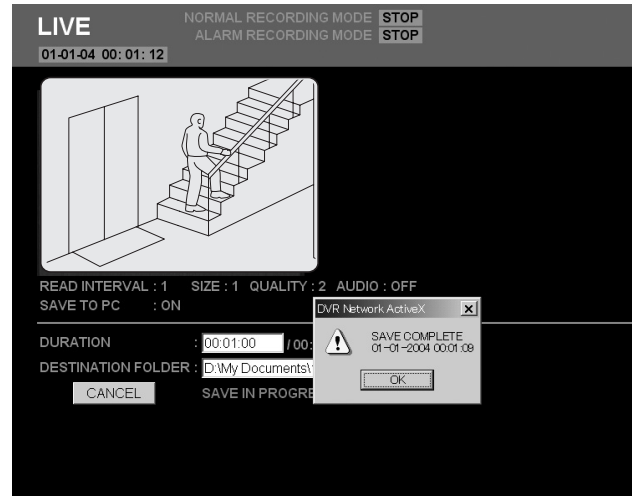
7 Click [OK] in the pop-up window.

The setting menu will close and the screen returns to the condition for procedure 2 above.
A folder named "DVR000001" will be created inside the folder set in procedure 3.
Images are stored in sequence from "000001.jpg" within the folder "IMG000001", and each folder can contain up to 200 files.

Example:
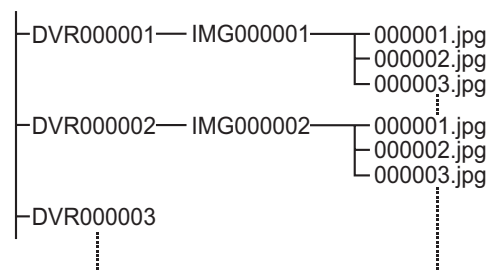
Images stored in the recording areas can be searched and played back in search mode. Furthermore, five different search methods are available for doing so.

Basic operation

1 **In live mode (When playback is stopped), click the 🔍 button on the operation panel.**

The SEARCH screen is displayed.

SEARCH

1. ALARM SEARCH
2. ALARM THUMBNAIL SEARCH
3. TIME/DATE SEARCH
4. ARCHIVE AREA SEARCH
5. MOTION DETECTION SEARCH
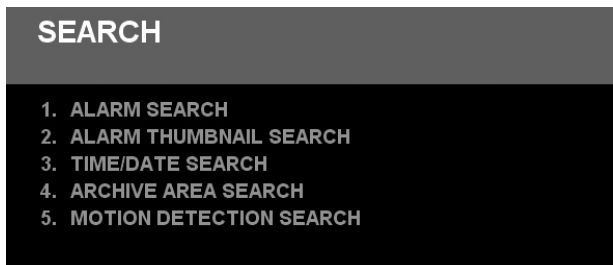
2 **Select and click the desired search mode from the SEARCH screen.**

The screen for the selected search mode is displayed.

3 **Search for images using the search mode screen.**

See the following pages for more details regarding the different search procedures.

4 **Check the returned images using the preview or thumbnail display and then click the screen.**

Play mode will be activated and the playback of the full image will start. See "Performing operations in play mode" (→P. 114) for more details regarding still image, fast-forward, and other similar operations.

Search menu

	Search mode	Recording area for searching	Description
1	ALARM SEARCH	Alarm recording area	Lets you search and play back alarm images from the alarm event list.
2	ALARM THUMBNAIL SEARCH	Alarm recording area	Lets you search and play back alarm images using thumbnails.
3	TIME/DATE SEARCH	Normal recording area and alarm recording area	Lets you search and play back recorded images by date/time.
4	ARCHIVE AREA SEARCH	Archive area	Lets you search and play back images stored (or copied) to the archive area using an image list.
5	MOTION DETECTION SEARCH	Normal recording area and alarm recording area	Lets you search and play back recorded images of moving objects detected in accordance with motion sensor settings.

1. ALARM SEARCH

In alarm search mode, images recorded in the alarm recording area are presented as a list of alarm numbers. Accordingly, alarm images from the recording list can be searched and played back.

(1)　　(2)　　　　　(3)

ALARM SEARCH

NO	DATE	TIME
0012	01 - 02	07 : 01
0011	01 - 02	07 : 01
0010	01 - 02	07 : 01
0009	01 - 02	07 : 01
0008	01 - 02	07 : 01
0007	01 - 02	07 : 01
0006	01 - 02	07 : 00
0005	01 - 02	07 : 00

PREVIEW　ALARM NO : 0012

PLEASE CLICK THE IMAGE TO PLAY.

BACK PAGE NEXT

(4)　　　　(5)
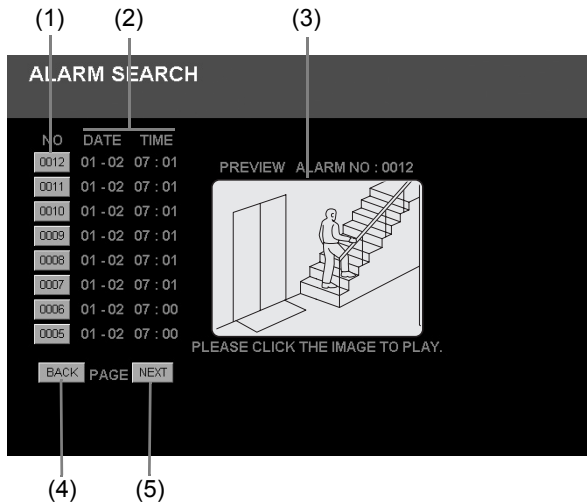
(1) NO: Alarm number
(2) DATE/TIME: Recording date and time
(3) PREVIEW: Displays a preview of alarm images
(4) [BACK]: Displays a list of the previous 8 images
(5) [NEXT]: Displays a list of the subsequent 8 images

1 Select "1. ALARM SEARCH" from the SEARCH menu.

An alarm event list is displayed in the ALARM SEARCH screen with newer recordings displayed first.

2 Select the alarm number to be played back from the alarm event list.

● Clicking an alarm No. button displays a preview of the corresponding alarm image.
● A maximum of 8 alarm events can be displayed on a single screen.
● Click [BACK] or [NEXT] to display the alarm event list for the previous or subsequent 8 events accordingly.

3 Click the preview screen for the image to be played back.

Full-screen playback will start from the point at which the alarm was triggered.

2. ALARM THUMBNAIL SEARCH

In alarm thumbnail search mode, all of the alarm images stored in the alarm recording area are displayed as thumbnails. Accordingly, you can search and play back alarm images using their thumbnails.

ALARM THUMBNAIL SEARCH

BACK PAGE NEXT

0016　　　0015　　　0014

0013　　　0012　　　0011

0010　　　0009　　　0008

PLEASE CLICK THE IMAGE TO PLAY.
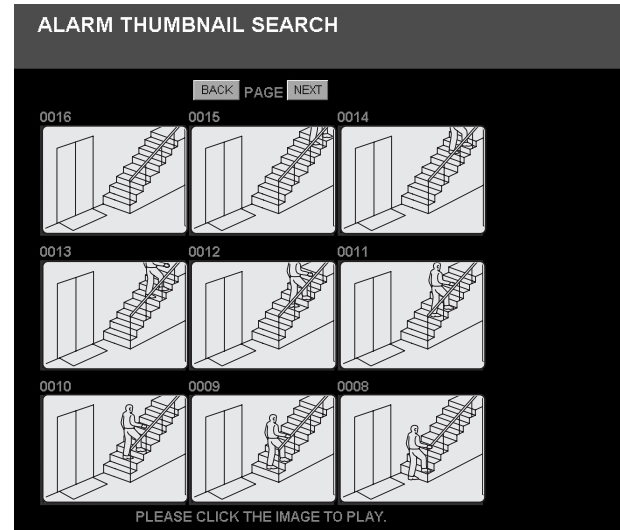
1 Select "2. ALARM THUMBNAIL SEARCH" from the SEARCH menu.

● The newest alarm images with attached alarm numbers are displayed in chronological order in the ALARM THUMBNAIL SEARCH screen.
● A maximum of 9 alarm events can be displayed as thumbnails on a single screen.
● Click [BACK] or [NEXT] to display the thumbnail screen for the previous or subsequent 9 events accordingly.

2 Click the thumbnail for the image to be played back.

Full-screen playback will start from the point at which the alarm was triggered.

3. TIME/DATE SEARCH

In date/time search mode, images from the alarm recording area can be played back by specifying the corresponding date and time.

(1)   (4)

TIME/DATE SEARCH

	DATE	TIME
RECORDING TOP	01 - 02 - 04	06 : 40
RECORDING END	01 - 02 - 04	07 : 07

(2) —

(3) — SEARCH   01 ▼ - 02 ▼ - 2004 ▼   06 ▼ : 40 ▼
PREVIEW

PREVIEW

(5) —

PLEASE CLICK THE IMAGE TO PLAY.
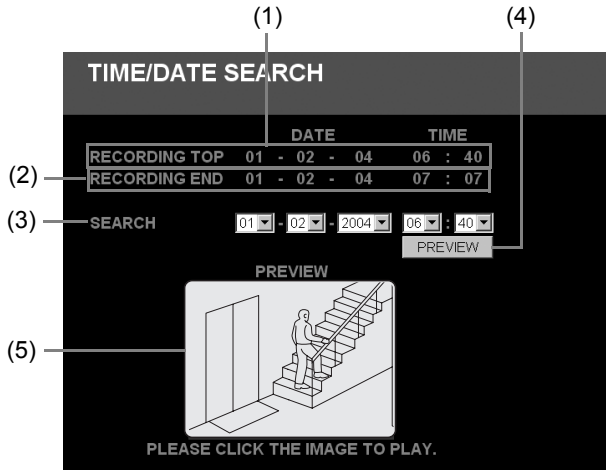
(1) RECORDING TOP: Displays the date and time of the oldest recording
(2) RECORDING END: Displays the date and time of the newest recording
(3) SEARCH: Used to set the recording date and time of the image to be played back
(4) [PREVIEW]: Used to indicate preview display
(5) PREVIEW: Displays a preview of the image corresponding to the specified date and time

1 Select "3. TIME/DATE SEARCH" from the SEARCH menu.

The TIME/DATE SEARCH screen is displayed.

2 Specify the recording date and time for the image to be played back using "SEARCH".

Month/Day/Year/Hours/Minutes

3 Click [PREVIEW].

When the search has been completed, the image corresponding to the specified date and time will be played back.

NOTE ▶

● If no image exists for the specified date and time, the image with the nearest recording date and time will be displayed.

4 Click the preview screen for the image to be played back.

Full-screen playback will start.

4. ARCHIVE AREA SEARCH

In archive area search mode, you can play back recorded images stored (or copied) to the archive area.

(1)   (2)   (3)   (4) (5)

ARCHIVE AREA SEARCH

NO	DATE	TIME	CAPACITY TOTAL - 812 MB
0001	01 -02	07 : 12	USED - 1 MB
0002	01 -02	07 : 12	PREVIEW NO 0001
0003	01 -02	07 : 12	
0004	01 -02	07 : 12	
0005	01 -02	07 : 12	
0006	01 -02	07 : 12	
0007	01 -02	07 : 12	
0008	01 -02	07 : 12	

BACK PAGE NEXT   PLEASE CLICK THE IMAGE TO PLAY.
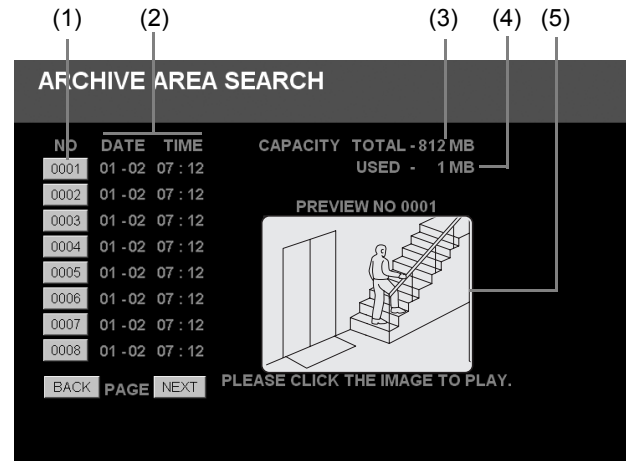
(1) NO: Image number
(2) DATE/TIME: Recording date and time
(3) CAPACITY TOTAL: Total capacity of the archive area
(4) CAPACITY USED: Amount of archive area capacity currently storing data
(5) PREVIEW: Displays a preview of the recorded image

1 Select "4. ARCHIVE AREA SEARCH" from the SEARCH menu.

The search screen for the archive area is displayed.
This screen contains a list of stored images displayed in sequence from the earliest item.

2 Select the image number to be played back from the stored image list.

● A preview of the corresponding stored image is displayed.
● A maximum of 8 stored images can be displayed on a single screen.
● Click [BACK] or [NEXT] to display the image list for the previous or subsequent 8 images accordingly.

3 Click the preview screen for the image to be played back.

Full-screen playback will start.

NETWORK
OPERATION

5. MOTION DETECTION SEARCH

By setting images recorded in the hard disk's normal recording area or alarm recording area to the motion sensor, variations from these images as a result of the presence of an intruder or the like can be detected, and the corresponding images can be played back.

(1)   (4) (6)

MOTION DETECTION SEARCH

(2)
(3)
(5)

(7)   (8)
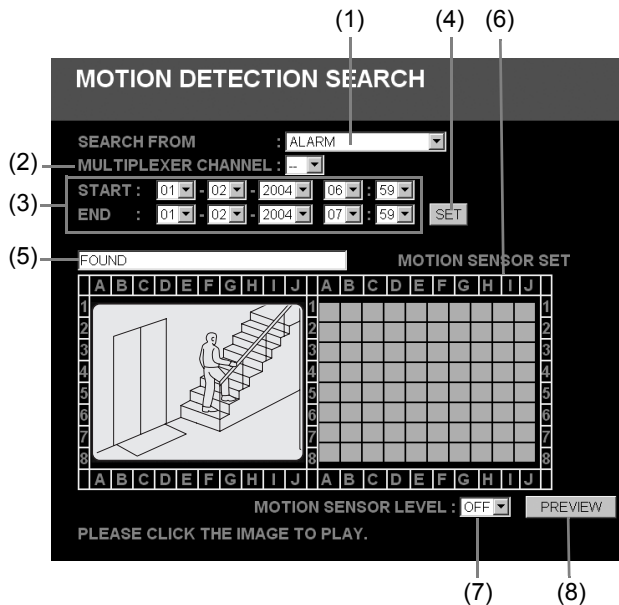
(1) SEARCH FROM
The recording area to be used for motion searching

(2) MULTIPLEXER CHANNEL
The channel of the multiplexer (camera number) to be used for motion searching

(3) START/END
The date and time of the start and end of the memory area for motion searching

(4) [SET]
Detection condition settings

(5) Message box
This box displays the results of searching for motion-detection images

When searching	"SEARCHING"
When motion-detection images exist	"FOUND"
When motion-detection images do not exist	"IMAGES NOT FOUND!"

(6) MOTION SENSOR SET
Screen for making motion sensor settings

(7) MOTION SENSOR LEVEL
Motion sensor sensitivity setting: OFF or 1 through 10

(8) [PREVIEW]
Displays a preview of the detection image

1 Select "5. MOTION DETECTION SEARCH" from the SEARCH menu.
The motion detection search screen is displayed.

2 Specify the recording area to be used for motion searching with "SEARCH FROM".
[Settings] (◆ indicates default setting.)

Setting	Description
◆ALARM	Searching will only be performed for images in the alarm recording area.
NORMAL	Searching will only be performed for images in the normal recording area.
ALARM & NORMAL	Searching will be performed for images in the alarm recording area and normal recording area.

3 Specify the channel (or camera number) for searching using "MULTIPLEXER CHANNEL".
If no multiplexer is being used and the number of channels is one, "-" will be displayed here.

4 Click [SET].
The date and time of the start and end of recording of motion detection images is displayed in "START" and "END" respectively.

NOTE ▶
● Use "START" and "END" to make new date and time settings when the searching range is to be reduced.
● The results of searching will be displayed in a message box when [SET] is clicked.

5 Setting motion sensor detection conditions.
● **Motion sensor positions**
The motion sensor setting screen shows an 8 x 10 (height x width) grid of sensors, and when one of these sensors is clicked, the corresponding sensor setting mark will turn red. If the same location in the grid is clicked once again, the motion sensor will be deselected.
● **Motion sensor sensitivity**
Lower numbers correspond to higher levels of sensitivity, and a setting should be made from the pull-down menu.

6 Click [PREVIEW].
A search is carried out within the specified area for images in which motion was detected, and these images are then listed in recording sequence in the preview screen.

7 Click the preview screen for the image to be played back.
Full-screen playback will start.

You can use the procedures described below to copy recorded images to the hard disk's archive area or to download images to a PC or the like.

These functions should be used to backup important images from the normal recording area and the alarm recording area.

NOTE

● Copied data is stored one image at a time. Moving images can be copied by setting the number of images required from the first copied image.
● In a single copy operation, a maximum of 10,000 images can be copied to the archive area and a maximum of 1,000 images can be downloaded to a PC.

CAUTION

● In certain cases where network-busy is detected as a result of hardware conditions, the network may be forcibly disconnected in order to protect DVR recording operations. Furthermore, the network will be forcibly disconnected in response to a command to send a large amount of data in a single operation (in particular, when 100 images or more are to be saved), and in such a case, a limit should be applied to the number of images based on the hardware configuration in question.
● When the archive area becomes full of images, these images are to be downloaded to a CompactFlash card or the like, and [AREA FULL RESET] from the recording area settings on the MAIN MENU should be clicked. (→P. 101)

Copying to the archive area
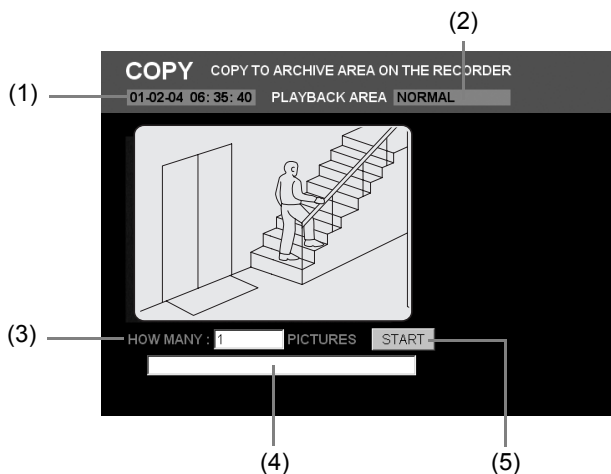
(2)

(1)

(3)

(4)   (5)

(1) Recording date/time: The recording date and time for the image currently being played back
(2) PLAYBACK AREA:
    The area in which the image currently being played back is recorded
    ●NORMAL
    ●ALARM
(3) HOW MANY: Setting for the number of images to be stored
(4) Message box: Displays the state of progress for copying
(5) [START]: Starts copying

1 Play an image from the normal recording area or the alarm recording area.

2 Click the ⏸ button at the start of the image to be copied.

Playback of the image is paused.

3 Click the 🖳 button on the operation panel.

The COPY screen is displayed.

4 Input the number of images into "HOW MANY".

Specifically, indicate the number of images after the start image to be copied in succession.
Setting range: 1 to 10,000
A warning message will be displayed if an invalid number is entered here.

5 Click [START].

Copying to the archive area will begin and the message box will display the current state of progress.
[Settings]

Setting	Description
Copying	"COPYING TO ARCHIVE AREA!"
Copying completed	"COPY FINISHED!"

Downloading to a PC

Use the following procedure to download recorded images to a PC.
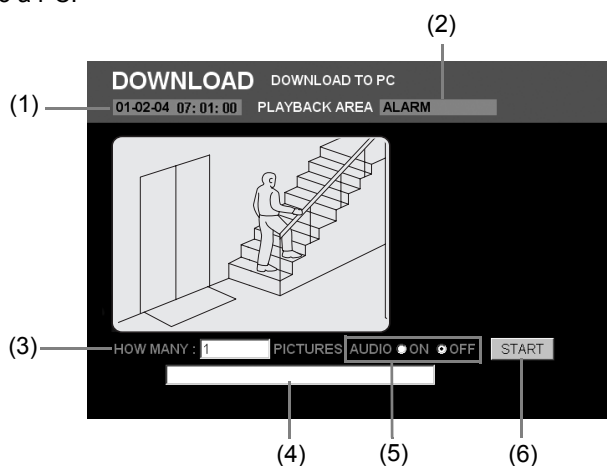
(2)

(1)

(3)

(4)   (5)   (6)

(1) Recording date/time: The recording date and time for the image currently being played back
(2) PLAYBACK AREA:
The area in which the image currently being played back is recorded
●NORMAL
●ALARM
●ARCHIVE
(3) HOW MANY: Setting for the number of images to be stored
(4) Message box: Displays the state of progress for downloading
(5) AUDIO: Setting for audio
(6) [START]: Starts downloading

1 Play a recorded image.

2 Click the ▮▮ button when the image to be downloaded is being played back.

Playback of the image is paused.

[NOTE]

● All images from the normal recording area, alarm recording area, and archive area can be selected for downloading.
● When downloading images from the normal recording area or the alarm recording area, these images will be automatically copied to the archive area, from where they will be sent as data.

3 Click the ⭳ button on the operation panel.

The DOWNLOAD screen is displayed.

4 Input the number of images into "HOW MANY".

Specifically, indicate the number of images after the start image to be downloaded in succession.
Setting range: 1 to 1000
A warning message will be displayed if an invalid number is entered here.

5 Select the "AUDIO".

[Settings]

Setting	Description
ON	Image audio will be copied.
OFF	Audio will not be copied.

6 Click [START].

Downloading will start and the message box will display "PLEASE WAIT!".
When all of the specified images have been downloaded, the image viewer screen will be called up and you will be prompted to confirm that the corresponding data is to be saved.

7 Click [OK].

8 Specify a location for storing the data.

Select [Save As…] from the Internet Explorer [File] menu and save the downloaded page.
By saving the page in this way, all selected images will also be saved.

⚠ CAUTION

● Internet Explorer 5.0 or later must be used: Saving of images will not be possible with earlier versions or other browsers.

* Image viewer screen

This screen allows you to check images that have been downloaded.

(4)　(5)　(6)　(7)　　　　(13)

(3)
(2)
(1)

DSR-300 IMAGE VIEWER

(8)

| TOP | PREV. | R.PLAY | STOP | PLAY | NEXT | END | CHANNEL | -- |

(9)　IMAGE SIZE　　　　●1 ●2 ●3 ●4 ●5
(10)　PLAY SPEED　　　　●1 ●2 ●3 ●4 ●5

(11)

IMAGE NUMBER　1/1　　TIME　10.17.2004　17:40:09　DOWNLOAD COUNT　1/1

(12)

| PLAY AUDIO | SAVE WITH AUDIO |

(14)
(15)
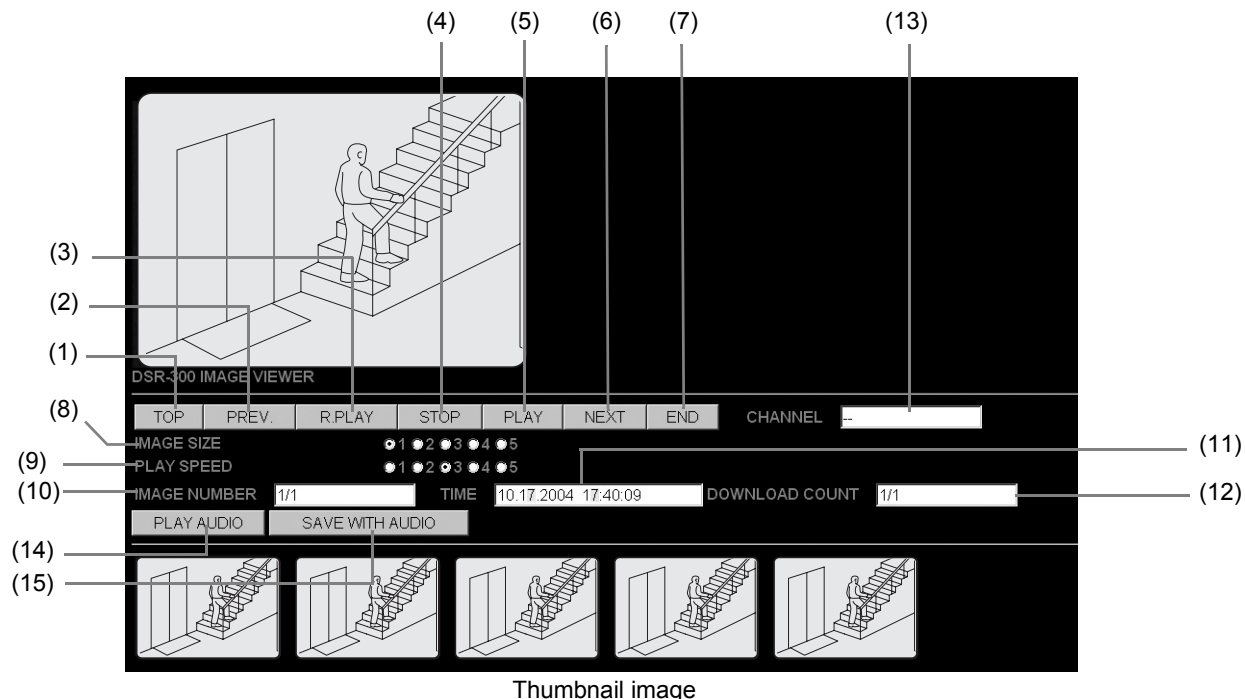
Thumbnail image

(1) [TOP]
Displays the first image.

(2) [PREV.]
Moves to the previous image.

(3) [R.PLAY]
Starts reverse playback. When the first image is reached, reverse playback will automatically continue from the last image.

(4) [STOP]
Stops playback.

(5) [PLAY]
Starts playback. When the last image is reached, playback will automatically continue from the first image.

(6) [NEXT]
Moves to the next image.

(7) [END]
Displays the last image.

(8) IMAGE SIZE
Sets the size of the display image.

1	400 × 300	4	1,024 × 768
2	640 × 480	5	1,280 × 960
3	800 × 600		

(9) PLAY SPEED
Sets the playback speed.

1	1000msec	4	100msec
2	500msec	5	25msec
3	250msec		

* The playback speed values will depend on the computing power of the PC being used.

(10) IMAGE NUMBER
Displays the number of the image currently being played back.

(11) TIME
Displays the recording date and time for the image currently being played back.

(12) DOWNLOAD COUNT
Displays the download progress in the form of "image currently being downloaded/total number of images to be downloaded". (If recording do not exist for all entered images, the overall number will be restricted to the recorded number.)

(13) CHANNEL
Displays the download channel (or camera number). (Only when connected to a multiplexer that can decode channel information.)

(14) [PLAY AUDIO]
Plays back the audio (you can also play back both audio and image on the screen).

(15) [SAVE WITH AUDIO]
Saves both the image and audio.

NETWORK OPERATION

The DVR Viewer is a program designed specifically for DVRs of all series. It can be used to play back image and sound data that has been copied onto media such as computer hard disk drives, CompactFlash cards and CD-Rs. Version 1.4.7 of this application can be installed from the CD-ROM supplied with this digital video recorder. In addition, DVR Viewer may also be downloaded from the Sanyo website.

Sanyo website URL: http://www.sanyosecurity.com

⚠ CAUTION

● When playing back sound data, you will need Version 1.4.7 or later. In the case of data that has been copied to a CD-R, only the images can be played back.

Operating environment

The following operating environment is required in order to use the DVR Viewer.
● Applicable operating system: Windows 98, 98SE, Me, 2000, XP
● Applicable computer: PC/AT compatible computer running one of the above operating systems
● When playing back images that include sound, you will need to have the plug-in "Active Allinstall 1.1.0" pre-installed on the system. (→P. 91)

Installing the DVR Viewer

Install the DVR Viewer by the following procedure.

1 Starting the installation wizard

Double-click the icon for the downloaded "Setup.exe" file to start the installation wizard.

2 Selecting the language settings

Select the display language for the software (English) in the [Choose Setup Language] window and then click [OK].

3 Starting the installation

Click [Next>] in the [Welcome to the InstallShield Wizard for DVR Viewer] window to start the installation process.
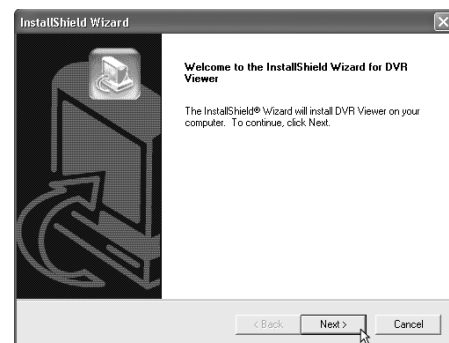
4 Choosing the destination location

Check that the destination folder shown in the [Choose Destination Location] window is correct, and then click [Next>].
If you would like to change the folder, click [Browse...] and specify the desired folder.

5 Starting copying of files

Check that all the settings shown are correct, and then click [Next>]. Copying of files will then start. If you would like to change any of the settings, click [<Back].

6 Completion of installation

When the installation is complete, the [Maintenance Complete] window appears. Click [Finish].

Opening and closing DVR Viewer

Opening DVR Viewer

From the Start menu, select [Programs] → [DVR Viewer]
→ [DVR Viewer] in the sequence to start the program.
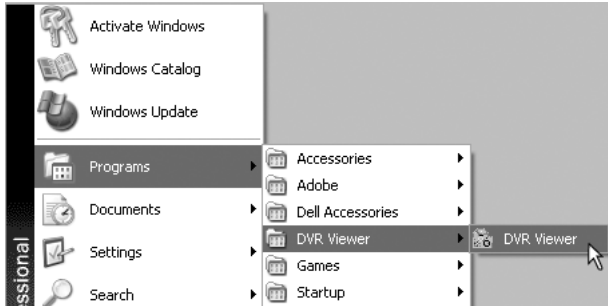
When DVR Viewer starts up, the following default window
appears.
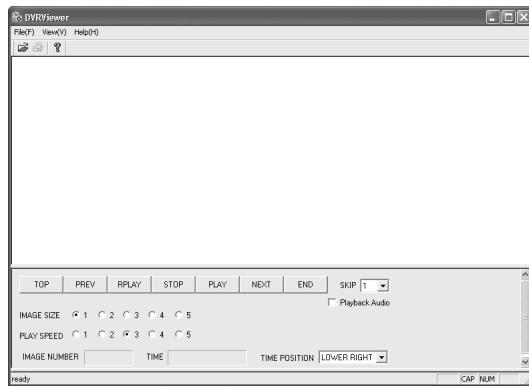
NOTE

● If you create a shortcut icon for DVR Viewer on the
desktop, you can open DVR Viewer quickly by double-
clicking the shortcut icon.
To create a shortcut icon, right-click [DVR Viewer] in the
Start menu, drag the name to a spare place on the
desktop, and select [Copy Here].
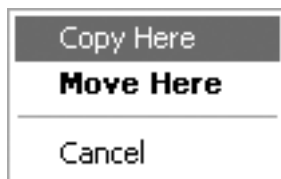
Closing DVR Viewer

Click the close button in the top-right corner of the program
window, or select [Exit (X)] from the [File (F)] menu to
close DVR Viewer.
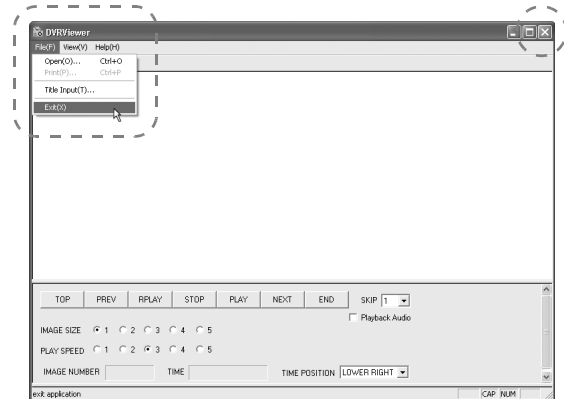
Menu structure

The basic menus for DVR Viewer are located on the menu
bar and tool bar in the upper-left of the window. Click a
command to open the corresponding menu.

Menu bar

This is the basic menu for DVR Viewer. Click a command
to view the details for that command.

(1)   (2)   (3)
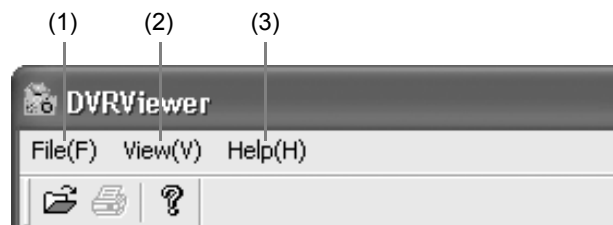
(1) File (F)
Open (O): Displays the Open file dialog box.
Print (P): Prints the specified file.
Title Input (T): Displays the dialog box for entering titles for
printed images.
Exit (X): Closes DVR Viewer.

(2) View (V)
Toolbar (T): Displays and hides the toolbar.
Status bar (S): Displays and hides the status bar at the
bottom of the window.
Separate (P): Moves the boundary line at the bottom of the
window up and down.
Date Display Format (D): Sets the date display format.

(3) Help (H)
Displays the version information for the DVR Viewer that is
currently open.

Toolbar

This contains commands that are most often used.

    (1)   (2)   (3)
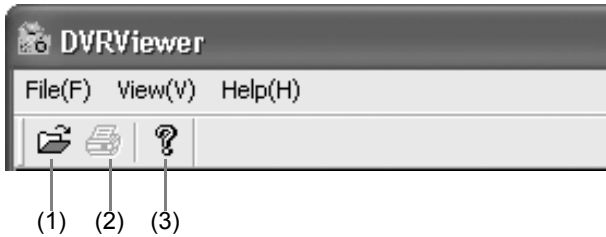
(1) Corresponds to the [Open (O)] command in the [File (F)] menu.
(2) Corresponds to the [Print (P)] command in the [File (F)] menu.
(3) Corresponds to the [Help (H)] command.

Opening files

When DVR Viewer is opened, you can open files to be played back by the following procedure.

1 Click [Open (O)] in the [File (F)] menu.

Alternatively, click the 📂 icon on the toolbar.

2 Specify the drive and folder containing the file to be opened.

In the [Open] dialog, use the radio buttons to select one of the following two options depending on the type of media that contains the image data.
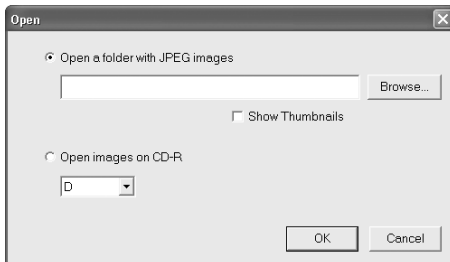
(1) Open a folder with JPEG images
Select this option if you would like to open JPEG images that have been copied from a DVR to a CompactFlash card or that have been downloaded to the computer over a network.
Click [Browse...] to display the folder tree. Specify the folder to be viewed and then click [OK].
If you would like thumbnail images to appear, check [Show Thumbnails].

⚠ CAUTION

● To play back sound, be sure to specify a folder that contains "WAV" files.
● When opening images that have been downloaded to a CD-R, you cannot do it when this option is selected, even if you specify a CD drive. Select the [Open images on CD-R] option below instead.

(2) Open images on CD-R
Select this option if you would like to open images that have been downloaded from a DVR to a CD-R. The drives that can be read from will appear in the box shown below. Specify the drive to be viewed and then click [OK].
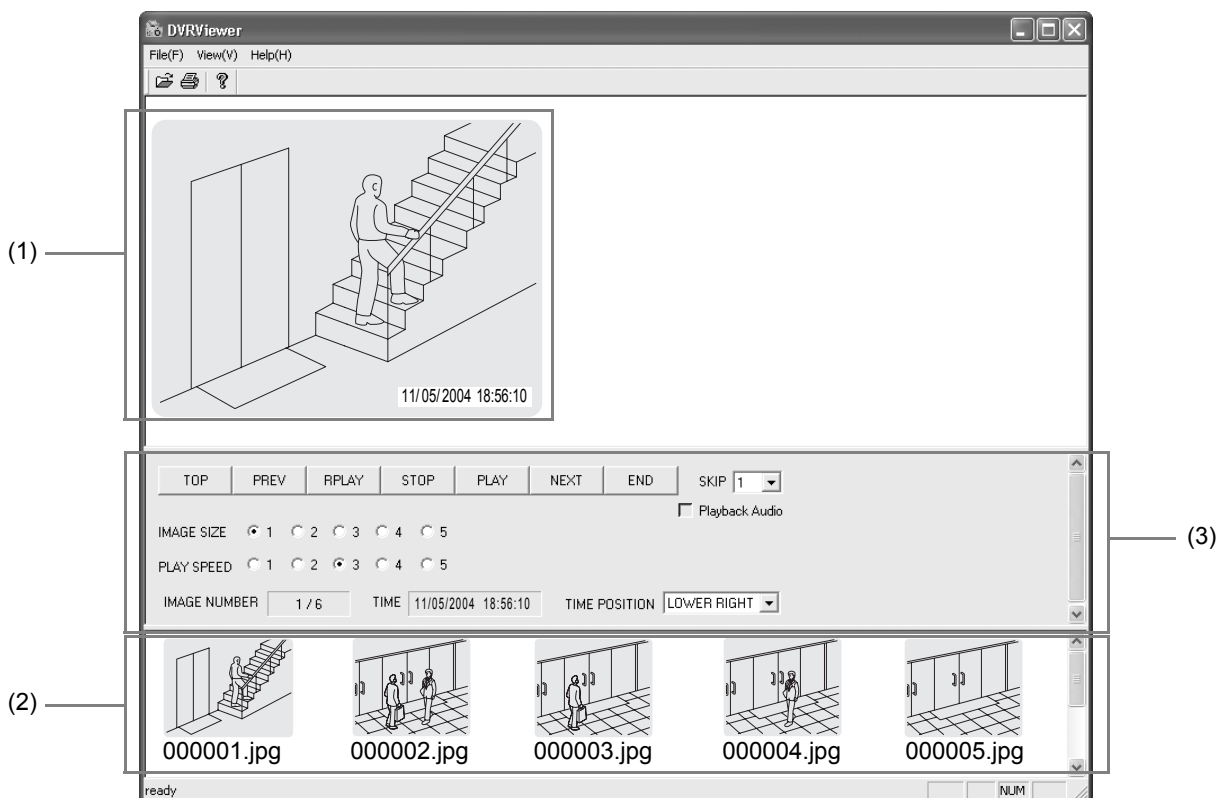● A drive letter such as [D:] appears.
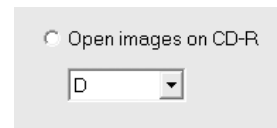
Viewing images

When image files are opened, the images that have been loaded appear. The display window consists of a main window and a thumbnail window, and you can use various operations in these windows such as a slideshow.

(1) Main window
When you double-click a thumbnail image, the image appears larger in the main window.
The following images appear at the time when files are opened.
● For CD-R image data:
First image
● For image data other than on CD-R:
Image with the smallest filename number

(2) Thumbnail window
All images that are stored in the specified folder appear as thumbnail images (compressed images) in ascending order of filename number. Thumbnail images that will not fit in the window can be viewed using the scroll bar.

! CAUTION

● In the case of CD-R image data, thumbnail images do not appear.

NETWORK OPERATION

(3) Control panel
This is used for playback operations in the main window and to adjust the images.
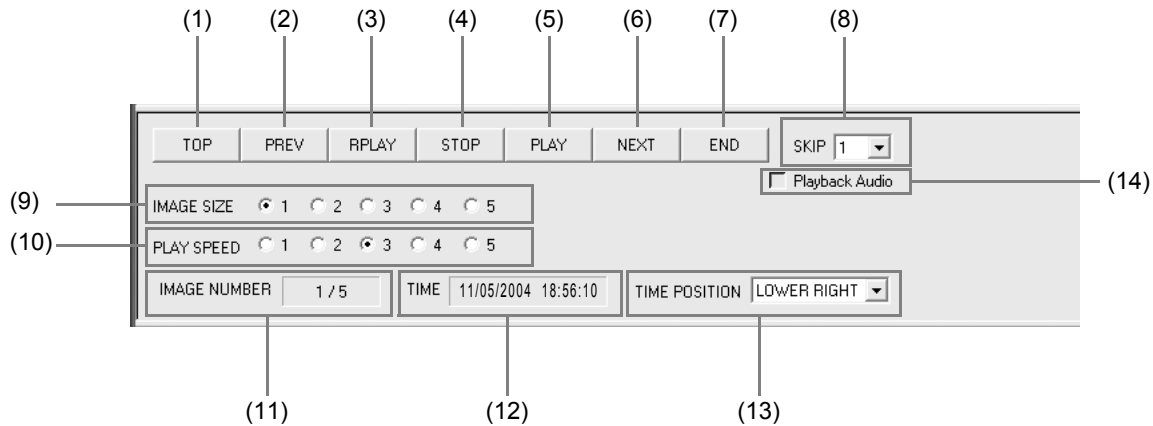
(1) [TOP]
Moves to the start of a slideshow.

(2) [PREV]
Moves to the previous image in a slideshow regardless of the setting for "(8) SKIP".

(3) [RPLAY]
Reverses back through the slideshow by skipping past the number of images specified by the setting for "(8) SKIP".

(4) [STOP]
Stops the slideshow.

(5) [PLAY]
Starts continuous playback of the slideshow by skipping through the number of images specified by the setting for "(8) SKIP".

(6) [NEXT]
Moves to the next image in a slideshow regardless of the setting for "(8) SKIP".

(7) [END]
Moves to the end of a slideshow.

(8) SKIP (Default setting: 1)
This sets the number of images that are skipped when playing and reverse playing slideshows. When using the default setting (= 1), all images are played back one at a time.
Setting values: 1, 2, 3, 4, 5, 10, 20, 30, 40, 50, 100, 200

(9) IMAGE SIZE (Default setting: 1)
The display size for images in the main window can be set to one of five sizes.
To display large image, select higher values.

(10) PLAY SPEED (Default setting: 3)
The playback speed for slideshows can be set to one of five speeds.

Playback speed	1	2	3	4	5
Playback interval	1 sec.	0.5 sec.	0.2 sec.	0.1 sec.	0.02 sec.

! CAUTION

● The actual playback speed may vary depending on the computer's performance.

(11) IMAGE NUMBER
Shows "Current image number/Total number of images".

(12) TIME
Shows the time stamp for the displayed image.

! CAUTION

● The year, month and day order is defined by the settings at the computer.

(13) TIME POSITION (Default setting: LOWER RIGHT)
This specifies the display position for the time stamp.
Available settings: LOWER RIGHT, UPPER RIGHT, UPPER LEFT, LOWER LEFT

(14) Playback Audio
To play back audio included in image files, check the checkbox.

Printing images

Specified images can be printed as full images together with date and time information.

1 To print the image in the main window

Select [Print (P)] from the [File (F)] menu, or click the 🖨 icon on the toolbar. The Windows print dialog box appears. Make any settings that are required such as selecting the printer and the number of copies to be printed, and then click [OK]. The main window will then be printed with the time stamp embedded in the image.
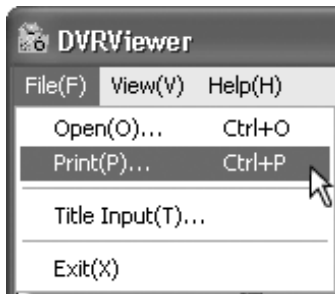
2 To print thumbnail images

Click the thumbnail image to be printed so that it appears in blue, and then repeat procedure 1 above.
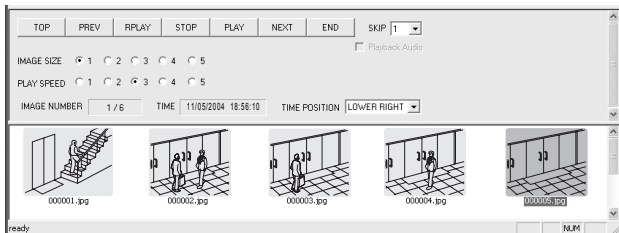
3 To print several images all at once

Hold down the [Ctrl] key on the keyboard, and then click on the images to be printed in the thumbnail window to select them. To select a contiguous range of images, hold down the [Ctrl] key and the [Shift] key simultaneously and then select the images. After selecting the images to be printed, carry out procedure 1 above. The selected images will then be printed one by one.
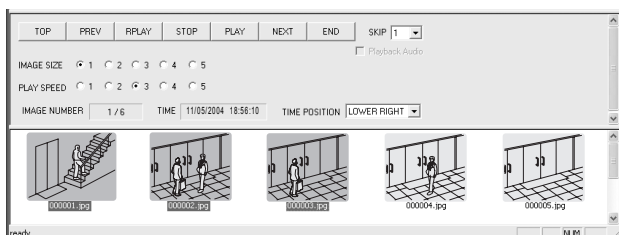
4 To display titles

To display titles for the images being printed, select [Title Input (T)] from the [File (F)] menu to display the Title Input dialog box.
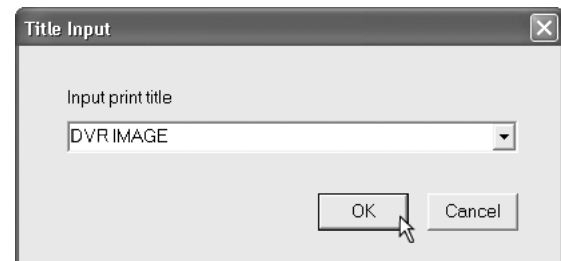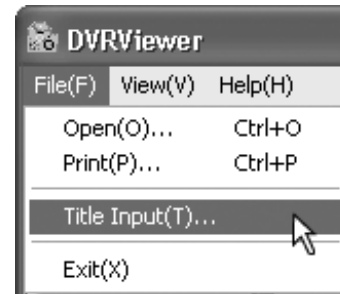
NOTE ▶

● The title entered will appear underneath the printed image. Up to 10 entered titles can be saved and selected from a list.

**NETWORK
OPERATION**

Saving images

In the case of images on a CD-R, the control panel includes buttons that can be used for saving images, so that images can be saved on another storage medium as described below. You can specify an existing folder to use or create a new folder, and you can also set your own filenames for the files being saved.

## 1 Specify the start image and end image to be saved.

Click [Set Copy Start image] and then use playback operations to select the start image. Then when playback is stopped, click [Set Copy End image] to set the starting point for the images to be copied using the image numbers.
Specify the copy end point in the same way.

[Start Copy]

[Set Copy Start image]

[Set Copy End image]
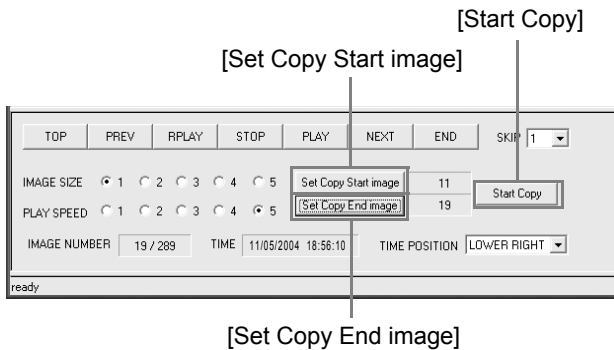
2 Click [Start Copy].

The [SAVE AS] dialog box appears.
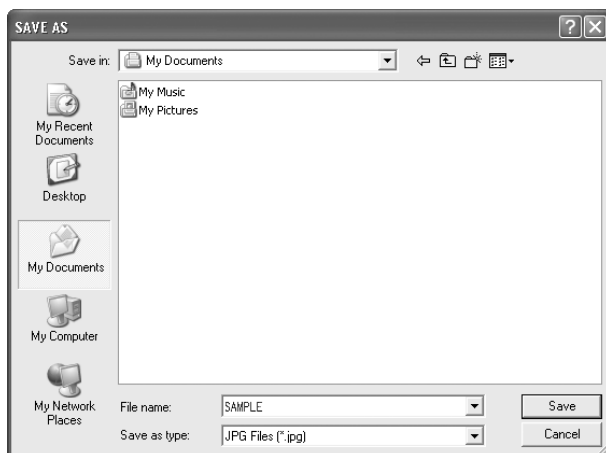
3 Specify the saving destination and the filename, and then click [Save].

The specified images will then be saved.
The filenames for each image will be generated automatically based on the number of images being copied and the filename you entered.
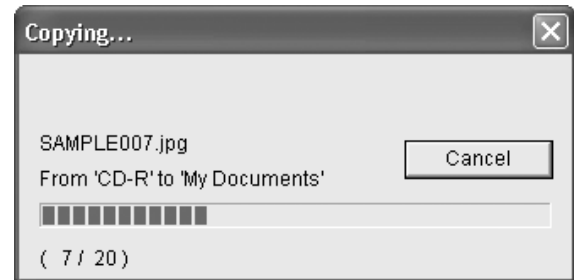
Example: If the number of images copied is "100" and the filename is "SAMPLE":

SAMPLE000.JPG
SAMPLE001.JPG
↓
SAMPLE099.JPG

Specifications

|		
Television system		NTSC color signal standard
Picture resolution		720 x 240 (field), 720 x 480 (frame)
Compression		M-JPEG
Picture quality		5 levels - Super Fine, Fine, Enhanced, Normal, and Basic
Recording type		Frame or field
Recording rate		27 levels
Recording areas		Normal recording area, alarm recording area, and archive area
Playback		Playback, still, and search
Search mode	Date/time search	Search by date and time
	Alarm search	Search from alarm list
	Alarm thumbnail search	Search from alarm thumbnails
	Archive area search	Search from archive area
	Motion detection search	Search motion detected using motion sensors
Menu language		English/French/Spanish
Clock settings		Month/Day/Year/Hours/Minutes/Seconds
Video input terminal		1 V (p-p), 75 Ω unbalanced, BNC connector
Video output terminal		1 V (p-p), 75 Ω unbalanced, BNC connector
Video loop output terminal		1 V (p-p), 75 Ω unbalanced, BNC connector
Audio input terminal		-8 dBs, 27 kΩ unbalanced (RCA pin jack)
Audio output terminal		-8 dBs, 600 Ω unbalanced (RCA pin jack)
CompactFlash card slot		CompactFlash Type 2 (front panel)
Option board (sold separately)	RS-232C terminal	9-pin D-SUB (to PC)
	RS-485 terminal	RJ-11 x 2
	LAN (100BASE-TX) terminal	RJ-45
Terminals	Alarm input terminal	Normal open, Low level active
	Alarm output terminal	Normal 5 V DC, Low level active
	Alarm reset input terminal	Normal open, Low level active
	SW output terminal	Switching pulse
	Non rec output terminal	Normal 5 V DC, Low level active
	Clock adjust input terminal	Normal open, Low level active
	Clock adjust output terminal	Normal 5 V DC, Low level active
	Warning output terminal	Normal open, Low level active
	Full warning output terminal	Normal 5 V DC, Low level active
	Alarm full output terminal	Normal 5 V DC, Low level active
	Series input terminal	Normal 5 V DC, Low level active
	Series output terminal	Normal open, Low level active
AC adapter		Input: 100 to 240 V AC, 50/60 Hz Output: 12 V/5 V DC
Current consumption		13 W
Allowable operating temperatures		5°C to 40°C
Allowable operating humidity		10% to 80%
Dimensions		210 (W) x 96 (H) x 380 (D) mm
Weight		3.1 kg

Note that product appearance and specifications are subject to change without prior notice.

Dimensions

Units: mm

210

96

Front

380
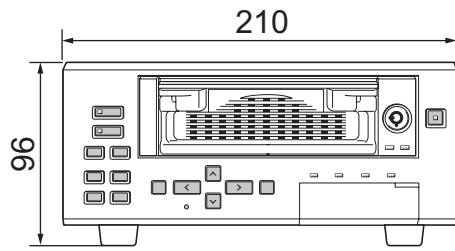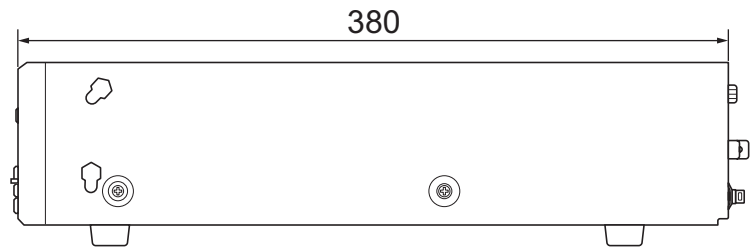
Side

SANYO INDUSTRIAL
DSR-300 DIGITAL VIDEO RECORDER WARRANTY

OBLIGATIONS

In order to obtain warranty service, the product must be delivered to and picked up from an Authorized Sanyo Service Center at the user's expense, unless specifically stated otherwise in this warranty. The names and addresses of Authorized Sanyo Service Centers may be obtained by calling the toll-free number listed below.

For product operation, authorized service center referral, service assistance or problem resolution, call

CUSTOMER INFORMATION 1-800-421-5013
Weekdays 8:30 AM – 5:00 PM Pacific Time

For accessories and/or parts, call

PARTS ORDER INFORMATION 1-800-726-9662
Weekdays 8:30 AM – 5:00 PM Pacific Time

THIS WARRANTY IS VALID ONLY ON SANYO PRODUCTS PURCHASED OR RENTED IN THE UNITED STATES OF AMERICA, EXCLUDING ALL U.S. TERRITORIES AND PROTECTORATES. THIS WARRANTY APPLIES ONLY TO THE ORIGINAL RETAIL PURCHASER OR END-USER. THE ORIGINAL DATED BILL OF SALE, SALES SLIP OR RENTAL AGREEMENT MUST BE SUBMITTED TO THE AUTHORIZED SANYO SERVICE CENTER AT THE TIME WARRANTY SERVICE IS REQUESTED.

Subject to the OBLIGATIONS above and EXCLUSIONS below, SANYO Fisher Company warrants this SANYO product against defects in materials and workmanship for the periods specified below. SFC will repair or replace (at its option) the product and any of its parts which fail to conform to this warranty. The warranty period commences on the date the product was first purchased or rented at retail.

LABOR	PARTS
1 YEAR	1 YEAR

EXCLUSIONS

This warranty does not cover (A) the adjustment of customer-operated controls as explained in the appropriate model's instruction manual, or (B) the repair of any product whose serial number has been altered, defaced or removed.

This warranty shall not apply to the cabinet or cosmetic parts, batteries or routine maintenance.

This warranty does not apply to uncrating, setup, installation, removal of the product for repair or reinstallation of the product after repair.

This warranty does not apply to repairs or replacements necessitated by any cause beyond the control of SFC including, but not limited to, any malfunction, defect or failure caused by or resulting from the use of any products operated outside of the operating temperature ranges stated in our product specification, (i.e., between 41 and 104 degrees Fahrenheit or between 5 and 40 degrees Celsius), unauthorized service or parts, improper maintenance, operation contrary to furnished instructions, shipping or transit accidents, modification or repair by the user, abuse, misuse, neglect, accident, incorrect power line voltage, fire, flood or other Acts of God, or normal wear and tear.

SFC does not guarantee that recorded pictures or information will be maintained on any product sent in for repair or replacement.

The foregoing is in lieu of all other expressed warranties and SFC does not assume or authorize any party to assume for it any other obligation or liability.

SFC DISCLAIMS ALL OTHER WARRANTIES EXPRESS OR IMPLIED, WITH REGARD TO THIS PRODUCT (INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS). IN NO EVENT SHALL SFC BE LIABLE FOR ANY SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING FROM THE OWNERSHIP OR USE OF THIS PRODUCT OR FOR ANY DELAY IN THE PERFORMANCE OF ITS OBLIGATIONS UNDER THIS WARRANTY DUE TO CAUSES BEYOND ITS CONTROL. SFC'S LIABILITY FOR ANY AND ALL LOSSES AND DAMAGES RESULTING FROM ANY CAUSE WHATSOEVER, ARISING OUT OF OR IN CONNECTION WITH THE SALE, USE OR OWNERSHIP OF THIS PRODUCT INCLUIING WARRANTOR'S NEGLIGENCE, ALLEGED DAMAGED OR DEFECTIIVE GOODS, WHETHER SUCH DEFECTS ARE DISCOVERABLE OR LATENT, SHALL IN NO EVENT EXCEED THE PURCHASE PRICE OF THE PRODUCT.

ATTENTION

For your protection in the event of theft or loss of this product, please fill in the information below for you own personal records.

Model No. _____
_____

Date of Purchase _____

Serial No. _____
(Located on back or bottom side of unit.)

Purchase Price_____

Where Purchased _____

SANYO